

*Course Offerings Bulletin*  
2001-2002

OHIO  
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# The Ohio State University

## Mission and vision statement

The Ohio State University has as its mission the attainment of international distinction in education, scholarship, and public service. As the state's leading comprehensive teaching and research university, Ohio State combines a responsibility for the advancement and dissemination of knowledge with a land-grant heritage of public service. It offers an extensive range of academic programs in the liberal arts, the sciences and the professions.

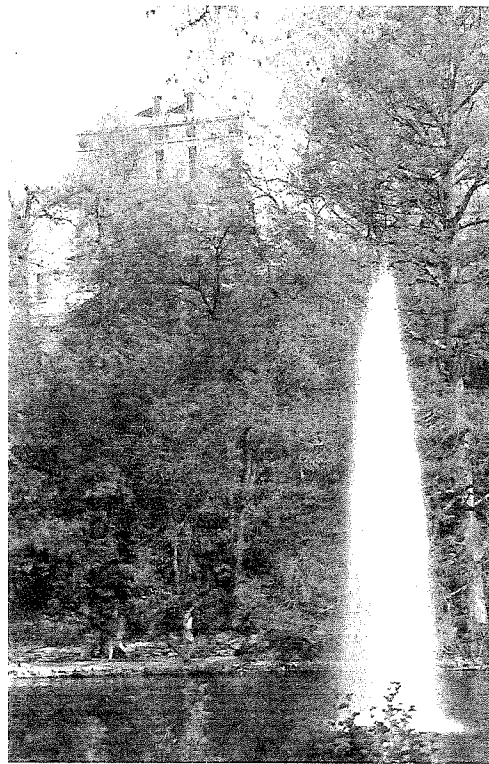
Ohio State provides accessible, high-quality undergraduate and graduate education for qualified students who are able to benefit from a scholarly environment in which research inspires and informs teaching.

At Ohio State, we celebrate and learn from our diversity and we value individual differences. Academic freedom is defended within an environment of civility, tolerance, and mutual respect.



The Ohio State University is a community of scholars of which:

- teaching and research are recognized as part of the same process: learning;
- academic units and curricula are structured to foster learning and nurture creativity;
- administrative services, facilities, and technology enrich the academic experience;
- academic programs and research opportunities are extensive and excellent, but not exhaustive; and
- human resources complement our promise: High-ability students, faculty, and staff from diverse backgrounds participate in leading programs and enrich an environment that sustains learning and growth.



Equality of opportunity is a basic philosophy of Ohio State. Mindful of the need for all persons to adapt to the changing roles and needs of society, the university also provides evening programs and continuing education opportunities to serve a wide spectrum of lifelong learning needs. In the exploration of new ideas and in the preparation of citizens for their roles in a changing society, the university represents a human commitment—an expression of the aspiration of people to better themselves and the world in which they live.

## Campuses

Columbus  
Lima  
Mansfield  
Marion  
Newark  
Agricultural Technical Institute, Wooster



# Course Offerings Book 3

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## The Ohio State University Bulletin

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Admission application forms are available from the Admissions Office, The Ohio State University, Third Floor Lincoln Tower, 1800 Cannon Drive, Columbus, Ohio 43210-1200; 614-292-3980.

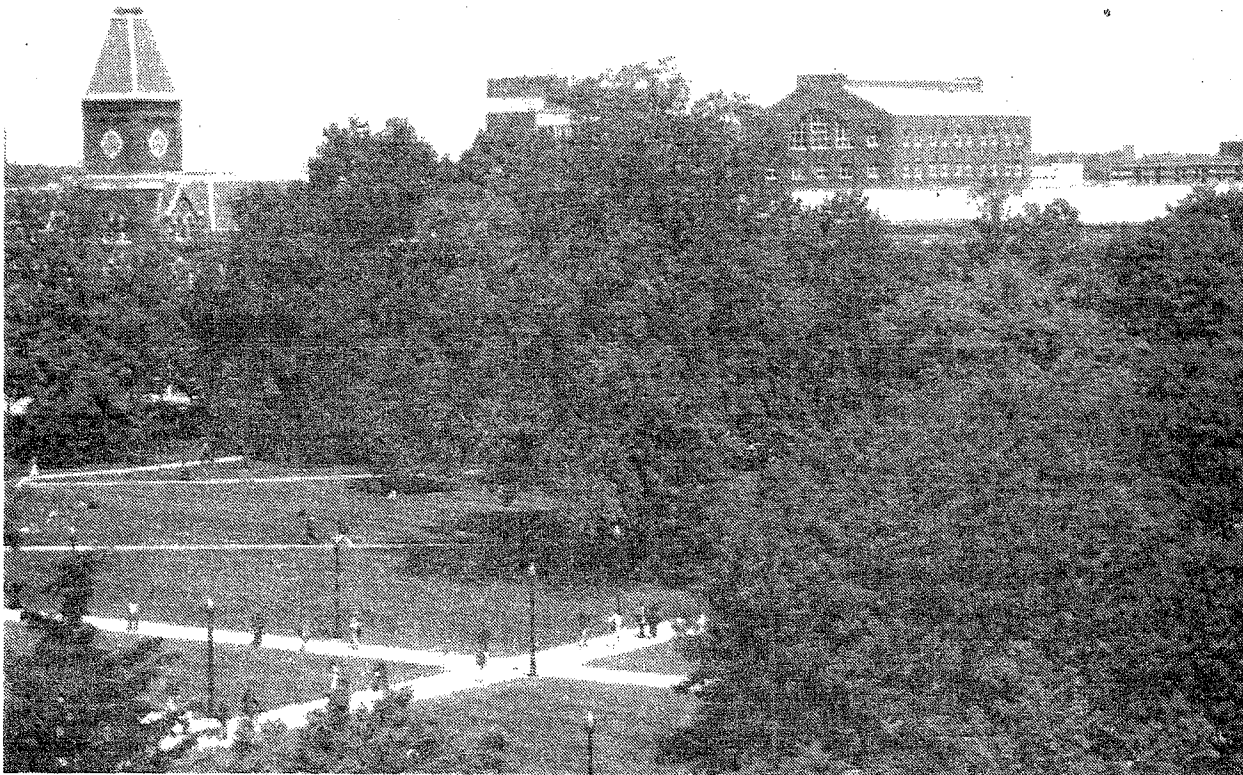
This publication is available in alternative formats upon request. Please contact the Bulletin Office at (614) 292-3980 for individual bulletins, for bulk orders call (614) 292-8822.

At The Ohio State University, every effort is made to provide accurate and up-to-date information. However, the University reserves the right to change without notice statements in The Ohio State University Bulletin series concerning rules, policies, fees, curricula, courses, or other matters when necessary.

In addition, Ohio State is currently reviewing and restructuring many of our academic programs in an effort to enhance their quality and improve our efficiency. In that process, some of the programs and courses mentioned in this bulletin may be modified, consolidated with other programs or courses, or eliminated. If you have questions about a particular program or course, you should contact the appropriate university college or department. You may be referred to any university departments by contacting the Admissions Office at 614/292-3980.

The language incorporated throughout this bulletin is intended to be inclusive and free of gender specific connotation. In those instances where gender specifically remains, unless specifically noted, it is to be considered as including both the masculine and the feminine genders.

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## Student Responsibility

Students are responsible for knowing their own standing scholastically in reference to the published regulations and standards of the University and of their college or school.

## Examinations and Marks

### Curricular Requirements (Rule 3335-7-06)

Every undergraduate curriculum must provide for a minimum of fifteen hours of free electives.

### Basic Education (Rule 3335-7-07)

Every undergraduate student must complete forty-five hours selected to ensure acquaintance with the three basic areas of academic study; the humanities, the social sciences, and the natural sciences. A minimum of fifteen hours is required in each of the three areas.

### Course Examinations (Rule 3335-7-19)

At the close of each course as defined in rule 3335-7-01 of the Administrative Code, an examination will be given on the student's capabilities relative to the stated course objectives, the method of examining to be determined by the instructor or supervisor of the course. Examinations in laboratory and seminar courses shall be optional with the instructor concerned. Examinations for graduating students shall be given at a time near the end of each course, preferably during the last week of classes.

### Schedules for Final Examinations (Rule 3335-7-20)

Examinations for classes taught on the regional campuses and for classes whose enrollment is exclusively of students registered in the Colleges of Dentistry, Law, Medicine and Public Health, Optometry, Pharmacy, and Veterinary Medicine will be scheduled

by the offices of the regional campuses and of the colleges respectively. All examination schedules prepared outside the Office of the University Registrar shall, before publication, be cleared with the Office of the University Registrar which shall have the power to resolve all conflicts.

Examinations for graduating students shall be arranged by individual instructors so that final grades for the affected students may be submitted to the Office of the University Registrar by the deadlines established by that office.

All other final examinations shall be centrally scheduled by the Office of the University Registrar. The official examination schedules shall be strictly adhered to by all instructors. Any deviation must first be approved by the appropriate university official (department chairperson, regional campus dean and director, or college dean) in consultation with the Office of the University Registrar, which shall have the power to resolve all conflicts.

In performing its scheduling function the Office of the University Registrar shall limit individual examinations to two-hour duration and the total examination period to no more than five days.

### Marks (Rule 3335-7-21)

The official marks of the University are A, A-, B+, B, B-, C+, C, C-, D+, D, E, EM, I, K, P, PA, NP, R, S, U, and W. The marks shall have the following meanings:

**A, A-** The instructor judged the student to have satisfied the stated objectives of the course in an excellent manner. The student's performance was judged to be *in this range* of high quality based upon a comparison with other students in the course, and/or with students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

**B+, B, B-** The instructor judged the student to have satisfied the stated objectives of the course in an above-average manner. The student's performance was judged to be *in this range* of above-average quality based upon

a comparison with other students in the course, and/or with students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

**C+, C, C-** The instructor judged the student to have satisfied the stated objectives of the course in an average manner. The student's performance was judged to be *in this range* of average quality based upon a comparison with other students in the course, and/or students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

**D+, D** The instructor judged the student to have satisfied the stated objectives of the course in a *low but acceptable* manner. The student's performance was judged to be *in this range* of below average but acceptable quality based upon a comparison with other students in the course, and/or with students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

**E** The instructor judged the student not to have satisfied the stated objectives of the course. Credit for a course in which the mark "E" has been received can be obtained only by repeating and passing the course in class. (See rules 3335-7-23 to 3335-7-28 of the Administrative Code.)

#### **EM Examination**

This mark indicates credit given to students registered in the University on the basis of examinations taken prior to or after admission to the University. The level of achievement which must be demonstrated by the student on these examinations in order to receive "EM" credit shall be determined by the department or school in which the course is offered for credit, in accord with the criteria for the award of letter grades. This credit, up to a maximum of 45 credit hours, shall be assigned only upon the authorization of the chairperson of the department or the director of the school and with the approval of the authorized representative of the dean or director of the student's enrollment unit. Additional examination credit hours may be assigned specific curricular programs with the prior approval of the Council on Academic Affairs.

Examination credit shall not be given to a student for a course in which the student has received a mark at this University or for which the student has transfer credit from some other college or university. Conversely, no course for which "EM" credit has been received can be taken later for a grade or credit. No credit points are allowed for courses in which a mark of "EM" is given.

#### **I Incomplete**

An "I" indicates that the student has completed a major portion of the work in the course in a satisfactory manner, but for reasons judged by the instructor to be legitimate, a portion of the course requirements remains to be completed.

The mark "I" shall be reported to the Office of the University Registrar together with the mark which the University Registrar is authorized to enter on the student's official record unless a different mark is reported to the Office of the University Registrar in the manner and within the time described below.

The student must complete the work so that the instructor of the course may report the final mark at the earliest possible time, but not later than noon of the sixth Friday of the quarter, semester, or session following that in which the "I" was received. For legitimate reason, the instructor may establish a deadline for the completion of the work which is within the maximum time permitted. Upon petition of the student within this period, the authorized representative of the dean or director of the enrollment unit in which the student was last enrolled after consultation with the instructor of the course, or, if the instructor is unavailable, the chairperson of the department involved, may for good reason allow a student additional time in which to complete the work. Generally, this shall not be longer than the end of the quarter, semester, or session following that in which the "I" was received. Any decision extending the period shall set forth the

time in which the student shall complete the work and a copy of the decision shall be forwarded to the Office of the University Registrar.

As soon as the incomplete work has been made up, the instructor, or in the case of the instructor's absence from the University, the department chairperson or the director of the school, shall file the proper mark in the Office of the University Registrar. Until such time as a final mark is recorded the credit for the mark "I" shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code.

In no case shall a student who has received the mark "I" be permitted to repeat the course in which such mark was received until such time as the "I" has been removed and then only in such cases as fall within Rule 3335-7-28 of the Administrative Code.

#### **K Credit**

This mark shall be used for work credited from other institutions by the director of admissions only. "K" credit shall be counted as hours only and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code (page 6).

#### **P Progress**

This mark is used to indicate that the student has shown satisfactory progress in a series or sequence of courses where the mark is not recorded until the final quarter, semester, or session of the series or sequence is completed. Until such time as a final mark is recorded the mark of "P" shall be given and the credit shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code (page 7). When a final mark is submitted by the instructor, all previous "P" marks shall assume and be recorded with the value of the final mark. "P" mark is not to be used for any course approved for the S, U grading option.

#### **PA-pass, NP-non-pass**

The grade pass "PA" means the student has satisfied the stated objectives of the course, and the grade non-pass NP is the equivalent of the grade "E".

These marks may be used at the option of undergraduate or continuing education students only, subject to the following conditions:

This grading pattern may be chosen for a maximum of thirty credit hours, provided the student has an accumulated point-hour ratio of 2.00 or higher.

Among these thirty credit hours, an undergraduate student may elect this option for courses in fulfillment of the curricular requirements of Rule 3335-7-06 of the Administrative Code.

An undergraduate student may elect this option for courses that are not required or designated as required electives in the curriculum leading to the degree for which the student is a candidate.

Hours graded pass "PA" count toward the minimal number of hours required for a degree. Pass or non-pass marks (PA, NP) are not computed in the point-hour average of the student.

Before five p.m., of the third Friday of a quarter or the second Friday of a term, a student must have declared intention to take a course on this basis by filing the appropriate form with the dean or director of the student's enrollment unit. A student may not change to or from this option after five p.m. of the third Friday of a quarter or the second Friday of a term.

#### **R Registered to Audit**

This mark indicates that the student has registered to audit the course and has met the conditions established for audit enrollment in the course. No credit hours shall be awarded for this mark (See rules 3335-7-29 and 3335-7-33 of the Administrative Code).

Before five p.m. of the third Friday of a quarter, semester, or session, or the second Friday of a term, a student must have declared intention to take a course for audit or to change from

a credit to an audit basis by filing the appropriate form with the dean or director of the student's enrollment unit. A student may not change to or from the audit option after five p.m. of the third Friday of a quarter, semester, or session, or the second Friday of a term.

#### **S-Satisfactory, U-Unsatisfactory**

The mark "S" may be used to record either satisfactory progress in or completion of work, provided that the course has been approved for this mark by the dean of the college offering the course, and in the case of courses carrying graduate credit, by the dean of the Graduate School. It shall be used as an alternative to "U" or "I" in all individual studies courses whatever their number. S credit shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code.

The mark "U" shall be used for unsatisfactory work in courses in which a student would be entitled to the mark of "S" if the student's work had been satisfactory. No credit shall be given for work marked "U". This mark shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code.

#### **W Withdraw**

This mark is used for students withdrawing from one or more courses or from the University. See Rule 3335-7-32 of the Administrative Code for procedures and provisions governing withdrawals.

### **Report of Marks (Rule 3335-7-22)**

Upon completion of the course requirements, marks for every student shall be reported to the Office of the University Registrar in accord with deadlines listed in the quarterly *Master Schedule of Classes*.

*This office maintains the student's official permanent record and is responsible for issuing a quarterly grade report to each student*

### **Alteration of Marks (Rule 3335-7-23)**

(A) A mark filed in the Office of the University Registrar is a part of the official records of the University. It is subject to change only when a procedural error has been discovered in evaluation or recording of a grade. Action to change a grade must be initiated before the end of the second succeeding quarter. In no case will a grade be revised in accordance with criteria other than those applied to all students in the class. If the instructor agrees that an error in the mark was made, the mark will be changed upon written authorization of: the instructor of the course; the instructor's department chairperson; the director of the instructor's school, if applicable; the dean of the instructor's college; and the authorized representative of the dean or director of the student's enrollment unit.

If a student believes that a procedural error in grading was made, the student should meet with the instructor. If the instructor does not agree that a procedural error was made, the student may meet with the department chairperson to discuss the grade grievance. The chairperson shall respond to the student no later than 30 days after the student has requested a review by the chairperson. Upon receipt of the chairperson's response, if the issue is not resolved to the satisfaction of the student, the student may within two weeks request in writing by duplicate submission to the dean or director of the instruction unit and the department chairperson the procedures in paragraph (B) of this rule. Unresolved cases of grade grievance due to grading procedures are subject to paragraph (B) of this rule; unresolved cases of grade grievance due to other causes are not subject to paragraph (B) of this rule.

(B) Unresolved cases of grade grievances due to grading procedures shall be reviewed by a faculty departmental committee appointed by the department chairperson.

• In cases of instructors still affiliated with the University, the review committee shall consult both the student and the instructor

and shall determine the validity of the grade grievance due to grading procedures. The review committee shall make its findings known in writing to both the student and the instructor within 30 days of the student's request to the chairperson. If the committee finds that a procedural error has occurred and if the instructor declines to accept the findings of the review committee, the committee shall consider the reasons for not authorizing a grade change given by the instructor and may, upon consideration of these reasons, authorize in writing a grade change to be instituted by the department chairperson.

• In cases of instructors no longer affiliated with the University, the findings of the committee shall be reported to both the student and the instructor. If the instructor chooses not to respond, the judgment of the committee shall prevail. If the instructor responds and declines to accept the findings of the committee that a procedural error has occurred, the committee shall consider the reasons for not authorizing a change given by the instructor. In either case, the committee may, upon due consideration, authorize in writing a grade change (if such can be determined) to be instituted by the department chairperson.

If a department committee can find no academic basis upon which to recommend an appropriate grade for the course, the student shall be given the option of having the course stricken from the student's record and, if so desired, to retake that course without prejudice or penalty.

(C) If charges of grave academic misconduct against an instructor are made and substantiated under Rule 3335-5-04 of the Administrative Code, the department chairperson shall be authorized to appoint a department grade grievance committee to consider grading errors that are alleged to be related to the misconduct. The committee shall consider all evidence and present, in writing, a report to the chairperson indicating any recommended grade changes. The department chairperson shall be authorized to institute grade changes in accordance with the recommendations of the committee.

If a department committee can find no academic basis upon which to recommend an appropriate grade for the course, the student shall be given the option of having the course stricken from the student's record and, if so desired, to retake that course without prejudice or penalty.

The Graduate School and graduate professional colleges may formulate appropriate modifications of this rule, subject to the approval of the Council on Academic Affairs, and publish this rule in their bulletins.

## **Course Credit**

### **Credit Hours (Rule 3335-7-24)**

(A) All courses shall be assigned a number of credit hours in accordance with the procedure outlined in rules 3335-7-02 to 3335-7-04 of the Administrative Code. This may be any number from zero on up; however, in determining the credit hours assigned, the department, school, college, and Council on Academic Affairs should use as a guide the following suggested standards:

- 1) One credit hour shall be assigned for each three hours per week of the average student's time, including class hours, required to earn the average grade of C in this course.
- 2) One credit hour shall be assigned for each two consecutive hours of practical or experimental work per week in any department or school.
- 3) One credit hour shall be assigned for each three hours of laboratory work per week, when no additional outside work is required. When outside work is required, then the standard in paragraph (A) (1) of this rule shall be applied.

(B) In determining the hours per week required by the course or work, the Council on Academic Affairs may, in appropriate cases, consider the average weekly hours spent during a quarter, semester, or session on the course or work. It should be remembered that the above are guides only and may be deviated from for good cause.

(C) When comparing or combining semester credit hours with quarter credit hours, one semester credit hour shall be the equivalent of one and one-half quarter credit hour.

### Credit Points and Point-hour Ratio (Synopsis of Rules 3335-7-25 and 3335-7-26)

A student's academic standing for a quarter, semester, or session is expressed by the point-hour ratio. This ratio is found by dividing the total number of points earned by the total number of credit hours scheduled or undertaken. Courses in which the marks EM, I, K, NP, P, PA, R, S, U, or W are given are not included in the computations. Courses in which the marks A, A-, B+, B, B-, C+, C, C-, D+, D, or E are given are computed according to the scale: A=4.00, A-=3.70, B+=3.30, B=3.00, B-=2.70, C+=2.30, C=2.00, C-=1.70, D+=1.30, D=1.00, and E=0.00. The following example shows how a point-hour ratio is determined.

	Hours	Grade	Points
Course No. 1	5	A	20.0
Course No. 2	3	C+	6.9
Course No. 3	(3)	I	
Course No. 4	3	E	0.0
	11		26.9

Point-hour ratio: 2.44

When the final grade on Course No. 3 is recorded, the points and hours will be included in the computation of the student's point-hour ratio. When a student has a record for two or more quarters, semesters, or sessions, the student will have a cumulative point-hour ratio determined by dividing the total points earned by the total hours undertaken.

The point-hour ratio begins anew when a student enrolls in Dentistry, Law, Medicine, Optometry, Pharmacy, Veterinary Medicine, or the Agricultural Technical Institute.

When determining the point-hour ratio of a student:

- For a quarter, semester, or session if applicable, the applicable number of credit hours shall be the student's scheduled credit hours in that quarter, semester, or session.
- For the student's work in the University, the applicable number of credit hours shall be the total number of credit hours undertaken in the University except as modified by Rule 3335-7-271.
- For the student's work in the Graduate School, the applicable number of credit hours shall be the total number of graduate credit hours undertaken while enrolled in the Graduate School. For the student's work in a professional college or school or professional division of a college, the applicable number of credit hours shall be the total number of credit hours undertaken while enrolled in the professional college or school or professional division of a college.
- For the student's work in the major field of interest, the applicable number of credit hours shall be the total number of credit hours undertaken in courses approved for the major program.

No College of Medicine point-hour average shall be computed for a student enrolled in the College of Medicine in a curriculum leading to the degree, Doctor of Medicine, when that student has received only the marks of H, S, or E in the College of Medicine.

### Recalculation of Cumulative Point-hour Ratio (Fresh Start Rule) (Rule 3335-7-261)

An undergraduate student who re-enrolls in the University after an absence of five or more years may petition the dean or director of his enrollment unit to recalculate the cumulative point-hour ratio of his previous residency. If the petition is approved, all courses taken will remain on the permanent record. Those with marks of A, A-, B+, B, B-, C+, C, C-, EM, K, PA, or S, will be counted for credit only. No other marks will be

counted for credit.

If the petition is approved, a student resumes his academic program with no cumulative point-hour ratio, and thereafter is subject to the conditions of warning, probation, and dismissal that govern all students (see Rules 3335-9-24 to 3335-9-28 of the Administrative Code).

Under the provisions of this rule a student, before graduation, must be re-enrolled for a minimum of 45 quarter credit hours and three academic quarters.

All courses ever taken at the University will be used in the calculation of the cumulative point-hour ratio required for the purposes of graduation with honors.

The Graduate School and graduate professional colleges may formulate appropriate modifications of this rule, subject to the approval of the Council on Academic Affairs, and shall publish the rule in their bulletins.

### Failure in a Required Course (Rule 3335-7-27)

An undergraduate or professional student who has not been dismissed from the University must repeat in a regularly scheduled class, at the first opportunity, a required course in which a mark of "E" has been received, unless an equivalent course is recommended and approved by the authorized representative of the dean or director of the enrollment unit.

A graduate student who has not been dismissed from the University must repeat in a regularly scheduled class a required course in which a mark of "E" has been received only if this is required by the student's adviser.

### Freshman Forgiveness Rule (Rule 3335-7-271)

(A) If a course in which an undergraduate student receives a grade of D+, D, or E, taken during the freshman year (the period during which the first forty-four credit hours are accumulated on the student's official permanent record) is repeated before the end of that student's sophomore year (when the student will have accumulated a total of eighty-nine credit hours), the original course credit and grade will be automatically excluded from the calculation of the student's cumulative point-hour ratio and deficiency points, but will remain on the student's official permanent record. This action will be subject to the following conditions:

- 1) If the grade in the original course was a D+ or D, a student may repeat the course for credit only upon the recommendation of the authorized representative of the dean, or director of the student's enrollment unit. Such recommendation must be obtained before noon of the third Saturday of the quarter in which the repeated course is taken.
- 2) The same course may be repeated only once under this rule.
- 3) This rule may be applied for a maximum of fifteen credit hours.

(B) The graduate school and graduate professional colleges may formulate appropriate modifications of paragraph (A) of this rule, subject to the approval of the council on academic affairs, and publish the rule in their bulletins.

### Repetition of Courses (Rule 3335-7-28)

Except as specified by Rule 3335-7-27 of the Administrative Code, undergraduate students who have received a mark of E or NP in a course at this university may repeat the course for credit at their option.

Undergraduate or professional students, as defined in Rule 3335-9-01 of the Administrative Code, who have received a mark of D+ or D in a course at this university may repeat the course for credit only upon the recommendation of the authorized representative of the dean or director of their enrollment unit.

Undergraduate or professional students, as defined in Rule 3335-9-01 of the Administrative Code, who have received a mark of A, A-, B+, B, B-, C+, C, C-, or PA in a course at this university or elsewhere may repeat the course only as auditors, in accordance with Rule 3335-7-29 of the Administrative Code.



A graduate student, as defined in Rule 3335-9-01 of the Administrative Code, may repeat for credit any course when approval is given by the student's adviser.

A student who has audited a course may subsequently repeat the course for credit only upon receiving permission of the authorized representative of the dean or director of the student's enrollment unit.

The credit hours for a repeated course shall in no case be counted more than once in meeting graduation requirements. When a student repeats a course, both grades appear on the student's record and both are used in computing the point-hour ratio, except as modified by Rule 3335-7-271 of the Administrative Code.

### **Admission to Courses as an Auditor (Rule 3335-7-29)**

An undergraduate or professional student may audit a course upon the approval of the professor in charge of the course and the dean of the college, or designee, in which the student is registered. (For repetition of courses, see Rule 3335-7-28 of the Administrative Code). A graduate student may audit a course upon the approval of the professor in charge of the course and the student's adviser.

### **Withdrawal from Courses or from the University (Rule 3335-7-32)**

Withdrawal from the University during a quarter, semester, or session, constitutes withdrawal from all courses in which a student is enrolled during that quarter, semester, or session. Upon official notification of the student's withdrawal from the University, the University registrar is authorized to enter the dated notation *withdrew* on the student's official permanent record.

To withdraw from any or all courses, a student must file the appropriate form with the authorized representative of the dean or director of the student's enrollment unit.

Until 5:00 p.m. of the third Friday of a quarter, semester, or session or the second Friday of a summer term, a student may withdraw from any or all courses which began in the same quarter, semester, session, or term, and no record for the course(s) will be entered on the student's official permanent record.

After 5:00 p.m. of the third Friday of a quarter, semester, or session and until 5:00 p.m. of the seventh Friday of a quarter, semester, or session, if a student withdraws from any or all courses which began in the same quarter, semester, or session, the University registrar is authorized to enter the mark "W" on the student's official permanent record for the courses withdrawn.

After 5:00 p.m. of the seventh Friday of the quarter, semester, or session or the second Friday of a summer term, a student who, because of circumstances beyond his/her control, finds it necessary to withdraw from any or all courses, must file the appropriate petition with the authorized representative of the dean or director of the enrollment unit. Reasons not acceptable include (but are not limited to) the student's performance in the course(s), lack of preparation for the course(s), or dissatisfaction with the subject matter offered in the course(s). If the petition is approved, a copy will be filed with the University registrar who is then authorized to enter the mark "W" on the student's official permanent record and the instructor(s) of the course(s) will be so notified. If the petition is not approved, the student continues to be enrolled in the course(s) and a final mark must be submitted by the instructor(s). Withdrawal from any and all courses shall not be permitted after the last day of regularly scheduled classes except when the student experiences a genuine emergency after the regularly scheduled classes end and prior to sitting for the final examination in a given course or courses.

Withdrawal from any or all courses shall not be permitted after the final examination in that course has been given.

A student who stops attending a course (or courses) and does

not officially withdraw from it (them) shall have the appropriate mark as submitted by the instructor entered on the student's official permanent record for the course(s). Such a mark shall be based on the grading criteria used to evaluate all students in the course.

Graduate professional colleges shall formulate rules to govern withdrawal of their students from courses in their respective curricula, subject to the approval of the Council on Academic Affairs, and publish these rules in their respective bulletins.

For provision regarding return of fees, when applicable, see Rule 3335-9-18 of the Administrative Code. This information may also be found in the Master Schedule of Classes Bulletin.

### **Conditions and Procedures for Disenrollment from a Course (Rule 3335-7-33)**

Subject to final approval by the Ohio State University Board of Trustees.

(A) The instructor (or in the case of a graduate teaching associate, the supervising faculty member), the chairperson of the instructor's department (with the agreement of the instructor), or other appropriate administrative official may disenroll a student from a course if:

1) After the third instructional day of the quarter, semester, session, or term, the first Friday of the quarter, or the student's second scheduled class session of the course, whichever occurs first, the student fails to attend the scheduled course without giving prior notification to the instructor. Under this paragraph, no student may be disenrolled from a course until after the first course meeting following the student's registration. When the department elects to use this procedure, the instructor, the chairperson, or other appropriate administrative official shall notify the student's enrollment unit. The enrollment unit will notify the student and take appropriate action to remove the student from the course.

Since not all departments exercise the option to disenroll students in all courses, this rule does not relieve the student of the responsibility for dropping a course the student is not attending.

2) The student enrolls to audit a course without the instructor's approval, or fails to meet the prerequisites of the course. Disenrollment procedures shall be the same as in paragraph (A) (1) of this rule.

3) Before the third Friday of a quarter, semester, or session, or the second Friday of a summer term, and following completion of a placement examination, or another appropriate measure of preparation or ability, the student is judged to be registered in an inappropriate course. The department or school offering the course may then instruct the secretary of the college or school in which the student is enrolled to change the student's registration either to a more elementary or more advanced course.

(B) Disenrollment is effective upon action of the instructor, department chairperson, or other appropriate administrative official.

(C) Credit for all rescheduled courses resulting from action under paragraph (A) (3) of this rule shall count toward the fulfillment of graduation requirements unless the student has previously earned university or college credit in a course having substantially the same subject matter content or the substituted course is one which the department or school, with the approval of the council on academic affairs, has established for students with inadequate preparation for college level courses of that department or school.

(D) If a student who has enrolled to audit a course fails to complete the requirements for audit specified by the instructor and also fails to withdraw from the course, the instructor shall so inform the Office of the University Registrar when marks are reported for the quarter, semester, or session. That office will then disenroll the student from the course, removing the course from the student's permanent record, and will notify the student and the student's college of the action taken.

(E) After investigation, including consultation with the instructor,

the student in question, and utilizing other University resources, as desirable, the chairperson (or other appropriate administrative official) may disenroll a student from a course if the student presents a clear and present threat of bodily harm or injury to the instructor or fellow students, or, after warning, continues to engage in disruptive conduct, either of which results in impairment of teaching or learning processes:

1) If, after attempting to resolve the difficulty by informal means, the department chairperson (or other appropriate administrative official) deems disenrollment necessary, the affected student shall be notified in writing. The notice shall be delivered by hand or sent through ordinary mail to the student at the last address supplied pursuant to Rule 3335-9-09 of the Administrative Code. Copies of the disenrollment action shall be sent to the dean of the instructional college, the dean of the student's college, the Office of the University Registrar, and the Office of Student Affairs.

2) The student may appeal to the senior vice president for academic affairs and provost or designee for waiver of disenrollment under paragraph (E) of this rule, provided the appeal is filed within 10 days of the disenrollment action. The senior vice president for academic affairs and provost shall make final determination on the appeal within seven days.

3) Disenrollment is effective upon the action of the department chairperson (or other appropriate administrative official), unless reversed by the vice president for academic affairs and provost, or designee.

(F) For disenrollment, exclusive of audit under paragraphs (A) and (B) of this rule, the University registrar shall enter on the student's official permanent record:

1) No mark, if the disenrollment occurs before five p.m. of the third Friday of a quarter, semester, or session course, or the second Friday of a summer term course; or

2) The mark, W, if the disenrollment occurs after five p.m. of the third Friday of a quarter, semester, or session course, or the second Friday of a summer term course.

## Admission

### Classification of Students for Admission (Rule 3335-9-01)

Students shall be classified as:

- Undergraduate students: regular or special. This shall include students registered in the colleges of Agriculture, Arts, Biological Sciences, Business, Human Ecology, Humanities, Mathematical and Physical Sciences, Social and Behavioral Sciences, the University College, the division of pre-professional education of the College of Education, the pre-engineering division of the College of Engineering, and the division of Continuing Education.
- Graduate students: regular, special, graduate nondegree, conditional, or transient. The provisional classification is used in conjunction with the regular, special, and conditional classifications.
- Professional students: regular or special. This shall include students either regularly or specially registered in the colleges or divisions of a college which admit after completion of a pre-professional curriculum.
- Transient students. This shall include regular enrollees of other institutions who with the recommendation of their college authorities enter this university for a brief residence (usually one quarter, semester, session, or term) without transfer of credits.
- Auditors. This shall include persons who desire to attend classes without receiving credit for any courses taken.

## Administrative hold

### Administrative holds (Rule 3335-9-16)

With the approval of the executive vice president and provost, an administrative hold may be placed on the records or accounts

of any person who fails to comply in a reasonable period of time with an obligation imposed under University rules or who has an overdue debt or fine. An administrative hold will cause certain services to be withheld, including, but not limited to: obtaining current quarter grades, registering or enrolling, being certified as eligible to obtain a degree or certificate, receiving a transcript, borrowing books or equipment, or participating in discount plans available to faculty, staff, or alumni.

The unit originating an administrative hold on the records or accounts of any person shall notify the person in writing of the obligation that is overdue by providing another itemized billing or list of actions requested, specifying when the administrative hold will become effective, and indicating the name and method of contacting an individual who can provide additional information. Any disputes concerning the legitimacy of a hold or its processing will be resolved by the University Registrar.

## Improper Registration

### Improper Admission or Registration (Rule 3335-9-20)

Admission or registration may be cancelled by the Director of Admissions or the University Registrar in cases of improper registration or when false or incomplete information is provided on the application for admission, registration forms, or other official documents. No credits earned subsequent to such cancellation and prior to proper admission or registration shall be entered upon the permanent record of the student. Students whose admission or registration is cancelled are not entitled to any refund of fees.

## Absences

### Absences (Rule 3335-9-21)

Each department or school may make its own rules relative to occasional absences by students from scheduled activities. If, however, a student is absent from a course to such an extent as to imperil his credit, or is notably irregular in attendance, it shall be the duty of the instructor concerned to report the facts promptly to the dean of the college in which the student is enrolled. The dean may take such action as deemed appropriate.

## Warning and Dismissal

### Minimum Scholastic Requirements (Synopsis of Rule 3335-9-23)

The academic standards controlling warning, probation, and dismissal of professional and graduate students shall be established by rule of the faculties of the college in which the professional student is registered, or of the Graduate School if the student is a graduate student; provided, however, that an undergraduate professional student shall not be dismissed from the University unless the student has 15 or more deficiency points which are computed on the basis of the entire undergraduate program.

A transfer student from another university who is admitted to advanced standing in this University shall have the point-hour ratio and deficiency points computed only upon work done at this University.

In order to remain in good academic standing in the University, an undergraduate student must maintain a cumulative point-hour ratio of at least 2.00. Deficiency points are applied only to the record of students whose point-hour ratio is below 2.00 and are defined as the number of credit points students would have to earn to bring their point-hour ratio up to that level. Deficiency points may be calculated by subtracting the number of credit points earned from twice the total number of credit hours attempted for which calculable grades (A, A-, B+, B, B-, C+, C, C-, D+, D, or E) were given.



### Academic Warning (Rule 3335-9-24)

Any student who has never attended another college or university and who seeks to enroll as a new freshman in this university shall be placed on special warning when his application for admission is received and processed if his academic credentials indicate the probability of low achievement. He shall be so informed before final registration and the payment of fees are completed, except as provided in Rule 3335-9-27 of the Administrative Code. The fact that special warning has been given shall be made known to the office of the college or school to which he seeks admission.

If, at the end of any quarter, a student subject to the provisions of Rule 3335-9-23 of the Administrative Code has accumulated fewer than 15 deficiency points, he shall receive a warning from the dean of his college or director of his school, except as provided in Rule 3335-9-27 of the Administrative Code.

### Academic Probation (Rule 3335-9-25)

Any student who has accumulated 15 or more deficiency points shall be placed on probation. The probation shall continue provided the student's college considers the student's progress to be satisfactory and shall be removed when the deficiency points are fewer than 15. The student shall be notified of probationary status by the dean of the college or the director of the school in which the student is registered, except as provided in Rule 3335-9-27 of the Administrative Code. Such notification shall include a clear statement of what shall be considered to be satisfactory progress.

Probation by special action: If at any time the preparation, progress, or success of a student in an academic program is determined to be unsatisfactory, the college or school in which the student is registered shall be empowered to place the student on academic probation. An undergraduate student admitted with conditions and who has not satisfied the conditions after earning 30 quarter credit hours through regular course enrollment at this university shall be placed on academic probation.

Requirements and definition: In order to remain in good standing in the University a student must maintain a point-hour ratio (see Rule 3335-7-26 of the Administrative Code), of at least 2.00. Deficiency points are applied only to the records of students whose point-hour ratio is below 2.00 and are defined as the number of credit points a student would have to earn to bring the student's point-hour ratio up to that level. Deficiency points may be calculated by subtracting the total number of credit points earned from twice the total number of credit hours attempted for which calculable grades (A, A-, B+, B, B-, C+, C, C-, D+, D, or E) were given.

### Academic Dismissal (Rule 3335-9-26)

If the student's college or school considers a student's progress as unsatisfactory in meeting the conditions placed on his probation, the college or school shall be empowered to dismiss him from the University. An exception to this authority for undergraduate professional students shall be in accordance with paragraph (A) of Rule 3335-9-23 of the Administrative Code. Notice of the dismissal shall be sent to the student by the dean of the college or the director of the school in which the student was registered for the quarter, except as provided in Rule 3335-9-27 of the Administrative Code. No student shall be subject to academic dismissal unless he is currently on probation.

### Notice of Dismissal (Rule 3335-9-27)

Notice of dismissal from the University shall be sent by the dean of the college in which the dismissed student is registered.

### Reinstatement after Academic Dismissal (Rule 3335-9-28)

Any student who may be reinstated by a college or school following academic dismissal shall be subject to such special requirements as may be determined appropriate by the dean of

the college or director of the school. If the performance record of any reinstated student does not meet the conditions of probation specified at the time of reinstatement, then the college or school in which he is registered shall determine whether the student is to be dismissed or continued on probation.

## Conditional/Unconditional Admission

For unconditional admission as an undergraduate student, applicants who graduate from high school on or after April 1, 1984, and transfer students with less than 45 transferable hours are required to have at least 15 high school college preparatory units distributed as follows: English-four units; Mathematics-three units; Social Sciences-two units; Natural Sciences-two units; Foreign Language-two units; visual or Performing Arts-one unit; and one additional unit from any of the above-mentioned subject areas. At the time students are notified of admission, they are also notified of any deficiencies. Academic advisors are available to help plan course work to remove conditions and answer any questions.

Admission conditions are satisfied by earning college credits in the subject areas of deficiency. Such credits may be earned by satisfactory completion of courses at Ohio State, by satisfactory completion of equivalent course work at other colleges, or by examination for credit. Admission conditions must be satisfied within the first 30 credit hours earned at Ohio State.

Ohio State courses which may be used to fulfill admission conditions in the foreign languages, the natural sciences, the social sciences, and the visual and performing arts are indicated in the following lists. For specific course descriptions, please see the course offerings listing in this book.

### Foreign Languages

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 101.51, etc.) and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

Completion of 102 or equivalent or placement into 103 is required to fulfill foreign language conditions. Not all of the following languages are offered each quarter.

Arabic	Japanese	Spanish
Bulgarian	Korean	Swahili
Chinese	Latin	Swedish
Czech	Modern Greek	Turkish
French	Persian	Twi
German	Polish	Ukrainian
Greek	Portuguese	Yiddish
Hausa	Romanian	Yoruba
Hebrew	Russian	Zulu
Hungarian	Serbo-Croatian	
Italian	Shona	

### Natural Sciences

In addition to the courses listed below, any course approved for meeting the natural sciences component of the Basic Education Requirements or the General Education Requirements may be used to fulfill admission conditions.

Agronomy 200, 240  
 Anthropology 200  
 Astronomy 150, 155, 161, 162, 291, 292  
 Biochemistry 105, 211  
 Biology 101, 102, 113, 114, H115, H116  
 Chemistry 101, 102, 121, 122, H201, H202  
 Entomology 100, 200, 361  
 Geography 220  
 Geological Sciences 100, 110, 121, 122, 203, 204, 206, 210

Microbiology 301, 509  
 Molecular Genetics 140, 201  
 Natural Resources 100  
 Pharmacy 200  
 Physics 100.01, 100.02, 103, 104, 111, 112, 131, 132  
 Plant Biology 101, 102, 201, 202, 210, 313  
 Zoology 201, 220, 232, 235, 313

## Social Sciences

In addition to the courses listed below, any course approved for meeting the social sciences component of the Basic Education Requirements or the General Education Curriculum may be used to fulfill admission conditions.

Agricultural Economics 110, 200, H200  
 Anthropology 201, 202  
 Black Studies 130.01, 161, 222, 248, 261, 282  
 Business Administration: Management and Human Resources 211  
 Communication 140  
 Economics 100, 200, 206  
 Family Resource Management 260  
 Geography 200, 240  
 History 111, 112, 131, 132, 151, 152, 201, 211, 212, 215, 220, 231, 233, 237, 251, 252, 254, 258, 265, 266, 268, 281, 286, 290  
 Journalism 101  
 Landscape Architecture 201  
 Political Science 101, 165, 201, 202, 210  
 Psychology 100, 101, 210, 230  
 Recreation Education 200  
 Rural Sociology 105, 110  
 Sociology 101, 202, 209, 210  
 Textiles and Clothing 272

## Visual and Performing Arts

Architecture 200, 201, 202  
 Art 170, 172, 182, 190, 231, 240, 242, 278, 290  
 Art, College of the 160  
 Black Studies 180, 244, 271, 272  
 Chinese 283  
 Communication 105, 110  
 Dance 200  
 Engineering Graphics 110, 121, 122, 141, 142, 166, 167  
 History of Art 111, 210, 211, 212, 216  
 Industrial Design 160  
 Landscape Architecture 200, 202, 203, 204, 271  
 Music 101.01, 101.02, 102.01, 102.02, 121, 141, 180, 181, 182, 183, 184, 186, 188.01, 188.02, 188.03, 188.04, 191, 195, 196.01, 196.02, 196.03, 196.04, 197, 199.01, 199.02, 199.03, 199.04, 199.05, 199.06, 199.07, 199.10, 199.11, 244  
 Photography and Cinema 201, 220  
 Physical Education 153.01, 153.02, 153.03, 154.04, 153.05, 153.06, 153.07, 163.01, 163.02, 163.04, 163.05, 163.06, 181.01  
 Speech and Hearing Science 135  
 Textiles and Clothing 270  
 Theatre 100, 205, 210, 220, 221, 222, 271, 280

## College or School Requirements

Each college or school has certain requirements which must be met by every student seeking to earn a degree in that college or school. The specific course requirements for the curricula administered by a given college or school can be found in the bulletin for that college or school. In addition to these, the University has established certain requirements outlined below.

## University Required Courses

### General Education Curriculum Requirements (GEC)

In addition to any college or school requirements, every undergraduate student must complete a body of course work that assures a broad acquaintance with the basic areas of academic study. Courses which may be used to meet the GEC are so designated throughout this bulletin. Not all GEC courses are acceptable in all curricula. Students should consult their specific college or school publications or their advisors before scheduling courses to be applied to this requirement.

The objectives of this part of the curriculum, as set forth by the University faculty, are as follows:

There are certain capacities and understandings, certain qualities, abilities, and characteristics which are part of what we understand as the liberating process a university is particularly suited to develop, nourish, and hone. Primary among these capacities is the ability to write and speak with clarity and precision; to read and listen critically and with comprehension. Of the same order is the ability to engage in careful logical thinking and critical analysis, including the abilities that permit intelligent responses to problems and arguments which involve quantitative data.

An understanding of and appreciation for the important modes of human thought and inquiry are crucial characteristics of a University education. An understanding of the methods of modern science and social science, the effect of science and technology on the natural and social environment, and the nature of mathematical knowledge constitutes part of this knowledge. The development of a refined historical, artistic, and literary consciousness is a further part. A university education should also develop and sharpen the capacity and confidence to make informed and discriminating ethical and aesthetic judgments.

We believe that an education in a university in our own nation today should foster an understanding of American institutions and the pluralistic nature of American society. It should also promote an understanding of the global interdependence of the modern world and should ensure facility with at least one language other than English. Finally, we think that an American university should seek to develop a deep appreciation for the cultural traditions that have formed and informed our nation and to develop a sense of the place of other cultures in world history.

### University Class Ranking System

Student rank in all the undergraduate colleges is based on total credit hours completed and recorded.

<u>Class Standing</u>	<u>Credit Hours Earned</u>	<u>Rank</u>
Freshman	0 through 44	1
Sophomore	45 through 89	2
Junior	90 through 134	3
Senior	135 and up	4

Rank begins anew when the student enrolls in Dentistry, Law, Medicine, Optometry, Pharmacy, Veterinary Medicine, or the Agricultural Technical Institute.

Students enrolled in the Graduate School receive the rank of either M-Master's (0-50 earned hours) or P-PhD (51 or more earned hours or master's degree).

Should there be any doubt concerning the correctness of one's rank, the student should consult with the appropriate enrollment unit.

### Retroactive Graduate Credit

Students registered in an undergraduate college, in Continuing Education, or in a professional college cannot receive graduate credit for courses taken when the student is not enrolled in the Graduate School.

## Graduate Credit for Undergraduates

An undergraduate may petition to take certain courses for graduate credit provided that:

- the student is a senior;
- the credit for the course is not used to meet baccalaureate degree requirements;
- the student's cumulative point-hour ratio is 3.00 or above;
- the student completes a Senior Petition form and secures permission by the end of the first day of classes from: the secretary of the student's college or school, the instructor in charge of the course, and the Graduate School; and
- the course is offered for graduate credit.

These courses may not be counted toward a graduate degree until the student has been admitted to the Graduate School, and until the Graduate Studies Committee accepts them and notifies the Graduate School. The hours are counted in the student's graduate earned and cumulative credit hours, and the grades are counted in the student's graduate cumulative point-hour ratio. Not more than 15 graduate credit hours may be completed under the Senior Petition.

## Degrees and Certificates (Rule 3335-9-29)

Degrees and certificates shall be awarded undergraduate and professional students by the Board of Trustees upon recommendation of the college or school faculties and the University Senate, transmitted to the Board by the President.

Degrees and certificates shall be awarded graduate students by the Board of Trustees upon recommendation of the Council on Research and Graduate Studies and the University Senate, transmitted to the Board by the President. (See Rule 3335-5-35 of the Administrative Code.)

## Requirements for the Associate of Arts Degree

To obtain the Associate of Arts degree, undergraduate students who have attended, or are attending, the Lima, Mansfield, Marion, or Newark campuses must:

- Successfully complete at least 90 quarter credit hours of university credit.

These 90 hours of credit may include a maximum of 12 quarter hours of technical special credit. Remedial courses (English 060, 100.01, 100.02, and 100.03; Math 040, 050, 052, 053, 075, 076, 100, 102, and 103 and courses listed in the *Course Offerings Bulletin* as not counting toward the baccalaureate degree) may not be applied.

Repeated courses shall be counted only once.

Level III or R placement on the Ohio State Math Placement Exam or the completion of Math 075 or 076 or 102 or above (excluding Math 180) is required.

- Successfully complete a core of 50 hours of requirements (with no overlap between areas) distributed as follows: English 110 or 111 (5), humanities (10-15), foreign language (0-10), social science (10-15), natural science (10-15), and analytical skills/mathematics (0-10).

Courses used to satisfy the humanities, social science, and natural science components must be chosen from the list of courses approved as University GEC requirements. Similarly, courses used to satisfy the analytical/mathematics skills component must be chosen from the list of courses approved GEC, plus Mathematics 105 and 106. If a student should decide to pursue a baccalaureate degree after obtaining the Associate of Arts degree, the student would be required to fulfill the GEC requirements of the degree-granting enrollment unit. In accordance with Faculty Rule 3335-7-21, the Pass/Non-Pass Option may not be used for any of the core courses.

- Maintain a cumulative point-hour ratio of at least 2.00 on all work attempted at Ohio State at the time of, or after the completion of, all other requirements.

- Complete 30 of the last 45 quarter credit hours through regular course enrollment at Ohio State.
- Complete 15 of the required 90 quarter credit hours on a regional campus.
- Complete a minimum of three quarter credit hours in regular course enrollment at Ohio State Summer Quarter 1980 or thereafter.
- Not have received a baccalaureate or a professional degree from an accredited institution.
- Have filed an application for the degree in accordance with rules and procedures prescribed by the Colleges of the Arts and Sciences. Application must be made within four years after the requirements have been completed, assuming no other degrees have been awarded in the interim.

## Requirements for an Undergraduate Baccalaureate Degree (Rule 3335-9-30)

To obtain an undergraduate baccalaureate degree from this University, an undergraduate student must:

(A) Have earned a minimum of 45 quarter hours credit through regular course enrollment at this University.

(B) Have been enrolled in the college, the Colleges of the Arts and Sciences, or the school recommending that degree during the last quarter necessary to complete degree requirements. The executive committee of the college, the Colleges of the Arts and Sciences, or the school recommending the degree may, on petition by the student, waive this requirement.

(C) Have satisfactorily completed the number of credit hours required for the curriculum being pursued. The minimum number of credit hours required in each curriculum shall include the credit hours required under Rules 3335-7-06 and 3335-7-07 of the Administrative Code. Credit hours required to satisfy admission conditions shall not be used to satisfy the requirements of Rules 3335-7-06 and 3335-7-07 of the Administrative Code. Credit hours are considered as "satisfactorily completed" only if the student has received, at this university the mark A, A-, B+, B-, C+, C-, D+, D, EM, K, PA, or S in those hours (see Rule 3335-7-21 of the Administrative Code).

(D) Have earned credit points (see Rule 3335-7-25 of the Administrative Code) totaling at least twice the number of credit hours attempted at this university for which calculable grades (A, A-, B+, B-, C+, C-, D+, D, or E) were given.

(E) Have satisfactorily met all additional college and curricular requirements for the degree involved.

(F) Have filed an application for the degree in accordance with rules prescribed by the college or school.

(G) Except for paragraph (B) of this rule, waiver of any part of this rule in the case of individual students may be made only by the Council on Academic Affairs following prior approval by the appropriate executive committee. The senior vice president for academic affairs and provost shall transmit all affirmative actions of the Council on Academic Affairs under this paragraph to the secretary of the student's college and to the University registrar for notation on the student's permanent record.

## Requirements for a Graduate Degree (Rule 3335-9-31)

To obtain a graduate degree from this university, a graduate student must have met the minimum requirements established by the Council on Research and Graduate Studies and approved by the Board of Trustees, and have filed an application for the degree in accordance with rules prescribed by the Council on Research and Graduate Studies.

## Requirements for a Professional Degree (Rule 3335-9-32)

To obtain a professional degree from this university, a student must meet the minimum requirements established by the

college or school recommending the degree. In establishing such minimum requirements, the college or school shall include or exceed the minimum requirements stipulated by the appropriate accrediting body. Such graduation requirements shall be subject to approval by the Council on Academic Affairs and shall be filed with the secretary of the Board of Trustees.

Waiver of minimum requirements may be made by the faculty of the college or school recommending the degree or by a committee approved by that faculty. Requests for such waiver may be initiated by student petition or by the dean or director. The Council on Academic Affairs shall be notified at least quarterly of each such action.

### **Requirements for Certificate of Study (Rule 3335-9-321)**

A certificate of study may be awarded concurrent with or following the student's receipt of a baccalaureate degree. Award of such certificates shall attest to demonstrated competence in a coherent academic curriculum, program or area of study.

To obtain a certificate a student must:

- Have been or be enrolled in the University during the last quarter of work necessary to complete the certificate requirement. In addition, the student must meet any residency requirement established by the college, the Colleges of the Arts and Sciences, or the school recommending the certificate.
- Have earned through regular course enrollment a minimum of 45 quarter hours credit in an approved certificate program. No certificate program shall require enrollment in and credit for more than 90 quarter hours. At least one-third of all quarter hours credit earned in a certificate program shall be at the 500-level or above. No more than five credit hours in the certificate program may be counted toward the student's undergraduate major or minor. Credit hours used to fulfill the requirements for one certificate may not be counted toward any other certificate.
- Have earned the mark of A, A-, B+, B, B-, C+, C, or C- for all courses counted toward the completion of the certificate requirements.
- Have attained an undergraduate cumulative grade point average of 2.00 (or a graduate cumulative grade point average of 3.00, as appropriate) in courses used to satisfy the certificate program requirements.
- Have satisfactorily met all additional college or school requirements for the certificate involved.
- Have filed an application for the certificate in accordance with rules prescribed by the college, Colleges of the Arts and Sciences, or school.

Waiver of any part of this rule in the case of individual students may be made only by the Council on Academic Affairs upon recommendation of the executive committee of the college, colleges, or school. The senior vice president for academic affairs and provost shall transmit all affirmative actions of the Council under this section to the secretary of the student's enrollment unit and to the University registrar for notation on the student's permanent record.

The colleges of Dentistry, Law, Medicine, Optometry, and Veterinary Medicine, and the Graduate School may establish requirements and conditions, rather than those above, for certificates of study. Such requirements must be approved by the Council on Academic Affairs.

Authority for approval of all certificate programs shall rest with the Council on Academic Affairs. Proposals for graduate certificates must also receive the approval of the Council on Research and Graduate Studies. The president of the University and the University Senate shall be regularly informed of Council actions in this regard.

### **Standards for Honors at Graduation (Rule 3335-9-33)**

(A) Degrees "cum laude," "magna cum laude," and "summa cum laude" may be granted for exceptional achievement in the

curriculum of each college or other enrollment unit. The designation "summa cum laude" may be granted only for those students who have achieved at least a 3.90 cumulative point-hour ratio at the time of graduation. The designation "magna cum laude" may be granted only for those students who have achieved at least a 3.70 cumulative point-hour ratio at the time of graduation. The designation "cum laude" may be granted only for those students who have achieved at least a 3.50 cumulative point-hour ratio at the time of graduation.

(B) Eligibility for these honors shall be based on a minimum of ninety credit hours of course enrollment at this university. The marks for all Ohio State coursework considered toward the degree will be included in calculating a student's eligibility for such honors, except that for a student who has completed ninety credit hours subsequent to application of a fresh start, in accordance with rule 3335-7-261 of the Administrative Code, only those marks received for coursework subsequent to fresh start will be considered toward calculating a student's eligibility for such honors.

(C) Standards for graduation "with distinction in [special subject (s)]" and "with honors in []" shall be as adopted by the council on academic affairs.

(D) Beyond these minimal requirements the enrollment units may establish additional stipulations for graduation "cum laude," "magna cum laude," and "summa cum laude."

## **Institutional Transfer**

The Ohio Board of Regents, following the directive of the Ohio General Assembly, developed a statewide policy to facilitate students' ability to transfer credits from one Ohio public college or university to another in order to avoid duplication of course requirements. Since independent colleges and universities in Ohio may or may not be participating in the transfer policy, students interested in transferring to independent institutions are encouraged to check with the college or university of their choice regarding transfer agreements.

### **Transfer Module**

The Ohio Board of Regents Transfer and Articulation Policy established the **Transfer Module**, which is a specific subset or entire set of a college or university's general education program. Transfer Module consists of 54 to 60 quarter hours (or 36 to 40 semester hours) of courses in the following areas: English, Mathematics, Arts and Humanities, Social and Behavioral Sciences, Natural and Physical Sciences, and Interdisciplinary Study.

A Transfer Module completed at one college or university will automatically meet the requirements of the Transfer Module at another college or university once the student is admitted. Students may be required, however, to meet additional general education requirements at the institution to which they transfer. For example, a student who completes the Transfer Module at Institution S (sending institution) and then transfers to Institution R (receiving institution) is said to have completed the Transfer Module portion of Institution R's general education program. Institution R, however, may require additional general education courses beyond the Transfer Module.

Since many degree programs require specific courses that may be taken as a part of the general education or Transfer Module program at an institution, students are encouraged to meet with an academic advisor at the institution to which they plan to transfer early in their academic career. For example, students who will be majoring in any of the majors in the College of Business and Administration at the receiving institution should take Economics 201, 202, and 203 (or equivalent course at another institution) rather than the Economics 200 course listed as a part of the Transfer Module. Because of specific major requirements such as these, early identification of a student's intended major is encouraged. Advisors at the institution to which a student wishes to transfer should be consulted regarding Transfer Module and general education courses and any specific program requirements that can be completed before transfer.

## Conditions for Transfer Admission

1. The policy encourages receiving institutions to give *preferential consideration* for admission to students who complete the Associate of Arts or the Associate of Science degrees with a cumulative grade point of 2.0 or better for all previous college level courses.
2. The policy encourages receiving institutions to give *preferential treatment* to students who have not earned an Associate of Arts or Associate of Science degree but have earned 60 semester hours or 90 quarter hours with a cumulative grade point of 2.0 or better for all previous college level courses.
3. The policy further encourages that students who have not earned an Associate of Arts or Associate of Science degree or who have not earned 60 semester hours or 90 quarter hours with a cumulative grade point of 2.0 or better for all previous college level courses are eligible for admission as transfer students on a competitive basis.

## Acceptance of Transfer Credit

1. Students who have completed the Associate of Arts or Associate of Science degree with a cumulative grade point of 2.0 or better will receive transfer credit for all college level courses in which a grade of D or better has been earned.
2. Students who have not earned an Associate of Arts or Associate of Science degree will receive transfer credit for all college level courses in which a grade of C or better has been earned.

Admission to a given institution, however, does not guarantee that a transfer student will be automatically admitted to all majors, minors, or fields of concentration at that institution. Once admitted, transfer students shall be subject to the same regulations governing applicability of catalog requirements as all other students. Furthermore, transfer students shall be accorded the same class standing and other privileges as all other students on the basis of the number of credits earned. All residency requirements must be successfully completed at the receiving institution prior to the granting of a degree.

## Responsibilities of Students

In order to facilitate transfer with maximum applicability of transfer credit, prospective transfer students should plan a course of study that will meet the requirements of a degree program at the receiving institution. Specifically, students should identify early in their collegiate studies an institution and major to which they desire to transfer. Furthermore, students should determine if there are language requirements or any special course requirements that can be met during the freshman or sophomore years. This will enable students to plan and pursue a course of study that will articulate with the receiving institution's major. Students are encouraged to seek further information regarding transfer from both their advisor and the college or university to which they plan to transfer.

## Appeals Process

A student disagreeing with the application of transfer credit by the receiving institution shall be informed of the right to appeal the decision and the process for filing the appeal. Each institution shall make available to students the appeal process for that specific college or university.

If a transfer student's appeal is denied by the institution after all appeal levels within the institution have been exhausted, the institution shall advise the student in writing of the availability and process of appeal to the state level Articulation and Transfer Appeals Review Committee.

The Appeals Review Committee shall review and recommend to institutions the resolutions of individual cases of appeal from transfer students who have exhausted all local appeal mechanism concerning applicability of transfer credits at receiving institutions.

## The O.S.U. Transfer Module

Instructions: The Transfer Module must include 54 quarter credit hours of introductory courses in the following areas: English composition, mathematics, arts/humanities, social and behavioral sciences, and natural and physical sciences. Students should follow these directions in selecting courses for the Transfer Module.

1. Select minimum area requirements from introductory courses marked with an asterisk (\*) in each section.
2. Complete the required total minimum hours of the Transfer Module from the remaining courses on this list. **NOTE:** To assure the most efficient transfer of academic credit, be sure to check with an academic adviser to select the courses most appropriate for the general education requirements and/or the major at the transfer college or university selected.

**ENGLISH COMPOSITION:** (select a minimum of 5 quarter credit hours from the starred areas)

- \* English 110 (5) or 111 (5)
- \* One of the following (5 credit hours each):  
Ag. Comm. 367; Art Edu. 367; Comm. 305, 316; Comp. Stds. 367.02; Econ. 367.01-367.03; Engl. 367.01-367.06; Home. Ec. Edu. 367; Natrl. Resour. 367; Physics 367; Theat. 367.01-367.02; Wom. Stds. 367

**MATHEMATICS** (select a minimum of 3 quarter credit hours from the starred areas)

- \* Mathematics 116
- \* Mathematics 130
- \* Mathematics 148
- \* Mathematics 150
- \* Computer and Information Science, any course at the 200 level or above offered by the Department of Computer and Information Science
- \* Philosophy 150, 250
- \* Statistics, any course offered by the Department of Statistics

**ARTS/HUMANITIES** (select a minimum of 9 quarter credit hours from the starred areas; select from at least two areas of study; at least one of the courses must be a literature (\*) course)

- Arabic 241, 371\*, 372\*
- Art Education 367
- \* Arts, College of the 160, 161
- Black Studies 251\*
- Chinese 232, 251\*, 501\*, 502\*, 503\*, 504\*
- Classics 101\*, 102\*, 222\*, 224, 225
- Communication 311
- \* Comparative Studies in the Humanities 101\*, 102.01\*, 102.02\*, 103\*, 104\*, 301\*, 308\*, 317
- Dance 200
- East Asian Languages and Literatures 131, 341
- \* English 201\*, 202\*, 220\*, 260\*, 261\*, 262\*, 270\*, 275\*, 280\*, 281\*, 290\*, 373\*
- German 291\*, 292\*, 299
- Hebrew 241, 370\*, 372\*
- \* History 111, 112, 131, 132, 151, 152, 171, 172, 200.01, 200.02, 251
- \* History of Art 210, 211, 212, 213, 216, 250, 505, 519, 520, 530, 576
- Japanese 231, 251\*, 252\*
- Jewish Studies 201

Judaic and Near Eastern Languages and Literatures 271\*

Modern Greek 241, 371\*

\* Music 140, 141, 341, 342, 343, 346, 347, 349

Persian 241, 371\*

\* Philosophy 101, 130, 230, 240, 270

Russian 135, 250\*

Scandinavian 222\*

Slavic Languages and Literatures 130, 245

Spanish 151

\* Theatre 100

Turkish 241, 371, 372\*

Women's Studies 201, 317

Yiddish 241, 371\*

**SOCIAL AND BEHAVIORAL SCIENCES** (select a minimum of 9 quarter credit hours from the starred areas; select from at least two areas of study)

Agricultural Economics 200

\* Anthropology 201, 202, 421.08

\* Economics 200

\* Geography 200, 240

\* International Studies 201, 230, 231, 245, 250

Linguistics 202, 261, 265, 271

\* Political Science 100, 101, 145, 165, 201, 210, 245

\* Psychology 100

Rural Sociology 105

Social Work 230

\* Sociology 101, 210, 345, 370, 380, 462, 463

Women's Studies 210

**NATURAL AND PHYSICAL SCIENCES** (select a minimum of 9 quarter credit hours from the starred areas; at least one course must be a laboratory (\*) course)

Astronomy 150, 161, 162

\* Biology 101\*, 102, 113\*, 114\*

\* Chemistry 101\*, 102\*, 121\*, 122\*

Geological Sciences 100\*, 121\*, 203\*

\* Physics 101\*, 102\*, 103, 104, 111\*, 112\*, 131\*, 132\*

\* Plant Biology 101, 102\*

## Course Offerings

Course information (title, credit hours, level, description, etc.) starts on page 17. The most current information regarding new courses, changes to existing courses, credit hours, sections, days, times, buildings, room, and instructors may be found in the quarterly Master Schedule of Classes Bulletin.

### Sample Course Listing

**A 444\*\* Principles of Animal Nutrition U 5**

**B** A study of fundamental principles of nutrition in mammals and birds.

**C** Su (1st term), Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. H444 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Chem 102 or 122 and Math 148 or equiv. Not open to students with credit for Animal Sc 444 or Pltry Sc 444. Open only to majors in animal nutrition. Repeatable to a maximum of 10 cr hrs; subdivisions not repeatable. Cross-listed in Animal Science and Poultry Science. GEC course.

**D 444.01 Principles of Animal Nutrition I**

**444.02 Principles of Animal Nutrition II**

### Explanation of a Course Listing

**A 444\*\* Principles of Animal Nutrition U 5**

**Course number: 444**

A caret (^) denotes that the course will not be offered this year. An asterisk (\*) indicates that the course is offered every other year.

**Course title: Principles of Animal Nutrition**

**Instructional Level: U**

U = Undergraduate

UG = Advanced undergraduate and graduate

G = Graduate

P = Professional

**Credit hours: 5**

**B** A study of fundamental principles of nutrition in mammals and birds.

**Course description:** A study of fundamental principles of nutrition in mammals and birds.

**C** Su (1st term), Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. H444 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Chem 102 or 122 and Math 148 or equiv. Not open to students with credit for Animal Sc 444 or Pltry Sc 444. Open only to majors in animal nutrition. Repeatable to a maximum of 10 cr hrs; subdivisions not repeatable. Cross-listed in Animal Science and Poultry Science. GEC course.

**Quarters of offering:** Su (1st term), Au, Wi, Sp

Su = Summer

Au = Autumn

Wi = Winter

Sp = Spring

**Classroom and laboratory hours:** 4 cl, 1 2-hr lab.

Course credit is earned through satisfactory completion of course work which may involve classroom, laboratory, bio-learning center, computer-assisted instruction, or field trip attendance.

**Honors statement:** H444 (honors) may be available to students enrolled in an honors program or by permission of dept.

**Prerequisite(s):** Chem 102 or 122 and Math 148 or equiv.

The course number(s) or other information indicates the preparation or classification required to enroll in the course. If no department name is listed, the number(s) refers to the specific course within the same department. If a class standing (freshmen, sophomore, junior, senior) or rank (1st, 2nd, 3rd, 4th yr standing) is listed, only students with that or higher level are eligible for enrollment. Enrollment in a course requires the successful completion of all prerequisites or their equivalents. The department, school, or college office should be consulted in case of question's of eligibility to take a course.

**Exclusion or limiting clause:** Not open to students with credit for Animl Sc or Pltry Sci 444. Open only to majors in animal nutrition.

**Repeatability clause:** Repeatable to a maximum of 10 cr hrs; subdivisions not repeatable.

Indicates the maximum number of hours a course may be repeated for credit.

**General information clause:** Cross-listed in Animal Science and Poultry Science (meaning this same course is also listed in these two academic areas).

Gives general information about the course.

**BER Courses:** Courses which may be used to meet the University's Basic Education Requirement (BER) are so designated throughout this bulletin. Not all BER courses are acceptable in all curricula. Students should consult their specific college or advisers before scheduling courses to be applied to this requirement.

**GEC Courses:** Courses which may be used to meet the University's new General Education Curriculum (GEC) are so distinguished throughout this Bulletin. Students should consult their specific college or adviser before scheduling courses to be applied to this requirement.

**FL, NS, SS, and VPA Admis Cond Courses:** Courses which may be used to fulfill admission conditions are so designated throughout this bulletin. For additional information, see pages 12-13.

- D**      **444.01 Principles of Animal Nutrition I**  
           **444.02 Principles of Animal Nutrition II**

**Decimal subdivisions:**

- 444.01 Principles of Animal Nutrition I  
 444.02 Principles of Animal Nutrition II

The decimal numbers are subdivisions of the generic number (444). These subdivisions may also carry the information described in A, B, and C. When registering for a course with decimals, the desired subdivision must be used rather than the generic number.

## University Classification and Course Numbering System (See Rule 3335-7-05)

Established 1967-68 (revised 1974-75), the system of numbering courses offered by the University is as follows:

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000-099 Non-credit courses (except certain seminars and colloquia) for orientation, remedial, or other noncollege-level experiences. These are courses with credit added to graduation requirements.

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100-199 Basic courses providing undergraduate credit, but not to be counted on a major or field of specialization in any department. Courses at this level are beginning courses, required or elective courses that may be prerequisite to other courses.

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200-299 Basic courses providing undergraduate credit and may be counted on a major or field of specialization.

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300-499 Intermediate courses providing undergraduate or basic professional credit that may be counted on a major or field of specialization.

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500-599 Intermediate courses providing undergraduate or professional credit that may be counted on a major or field of specialization, and may provide graduate credit only in other departments.

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600-699 Courses providing undergraduate or professional credit that may be counted on a major or field of specialization, and may provide graduate credit (in all departments).

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700-799 Advanced courses providing undergraduate, graduate, or professional credit.

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800-999 Courses providing graduate credit and are open to undergraduates only with the consent of the dean of the Graduate School.

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\* Courses for which graduate credit is anticipated must be taught by a member of the faculty approved by the graduate committee of the department offering the course. 800 and 900-level courses must be taught by members of the graduate faculty.



## Organization of Instructional Units (OIU's)

### College of the Arts

Department of Art  
 Department of Art Education  
 Department of Dance  
 Department of History of Art  
 Department of Industrial, Interior and Visual Communication Design  
 Department of Theatre

### School of Music

### College of Biological Sciences

Department of Biochemistry  
 Department of Entomology  
 Department of Microbiology  
 Department of Molecular Genetics  
 Department of Plant Biology  
 Department of Evolution, Ecology, and Organismal Biology  
 Division of Sensory Biophysics

### College of Business

Department of Accounting and Management Information Systems  
 Department of Finance  
 Department of Management and Human Resources  
 Department of Management Sciences  
 Department of Marketing & Logistics

### College of Dentistry

### College of Education

School of Educational Policy and Leadership  
 School of Physical Activity and Educational Services  
 School of Teaching and Learning

### College of Engineering

Department of Aerospace Engineering and Aviation  
 Department of Chemical Engineering  
 Department of Civil and Environmental Engineering and Geodetic Science  
 Department of Computer and Information Science  
 Department of Electrical Engineering  
 Department of Industrial, Welding and Systems Engineering  
 Department of Materials Science and Engineering  
 Department of Mechanical Engineering  
 School of Architecture

### College of Food, Agricultural, and Environmental Sciences

Department of Agricultural, Environmental and Development Economics  
 Department of Animal Sciences  
 Department of Food, Agricultural and Biological Engineering  
 Department of Food Science and Technology  
 Department of Horticulture and Crop Science  
 Department of Human and Community Resource  
 Department of Plant Pathology  
 School of Natural Resources  
 Agricultural Technical Institute  
 Cooperative Extension Service - State  
 Cooperative Extension Service - Field

### Graduate School

### College of Human Ecology

Department of Human Development and Family Science  
 Department of Human Nutrition and Food Management  
 Department of Consumer and Textile Sciences

### College of Humanities

Department of African-American and African Studies  
 Department of East Asian Languages and Literatures  
 Department of English  
 Department of French and Italian  
 Department of Germanic Languages and Literatures  
 Department of Greek and Latin  
 Department of History  
 Department of Linguistics  
 Department of Near Eastern Languages and Cultures  
 Department of Philosophy  
 Department of Slavic and East European Languages and Literatures  
 Department of Spanish and Portuguese  
 Department of Women's Studies  
 Division of Comparative Studies in the Humanities

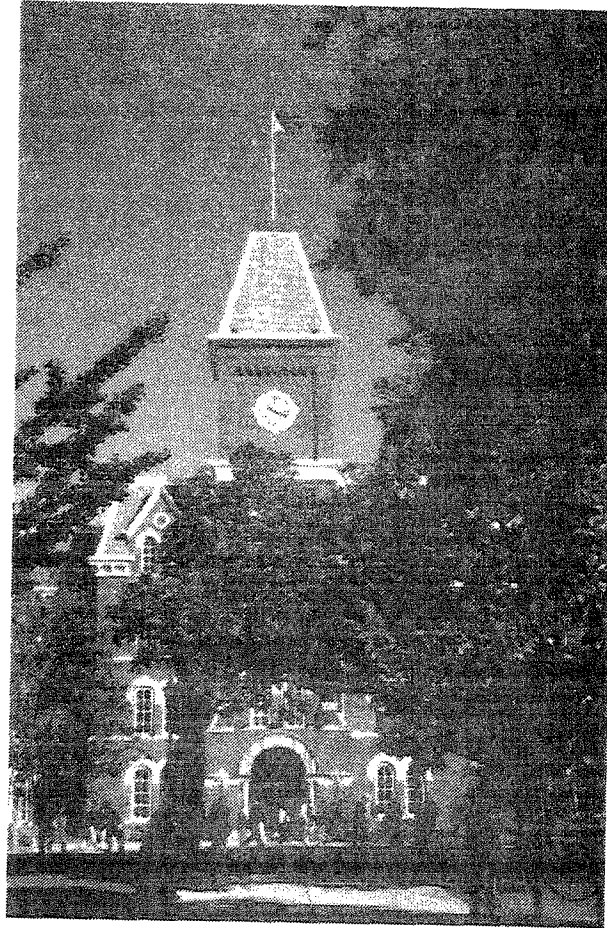
### College of Law

### College of Mathematical and Physical Sciences

Department of Astronomy  
 Department of Chemistry  
 Department of Geological Sciences  
 Department of Mathematics  
 Department of Physics  
 Department of Statistics

## **College of Medicine and Public Health**

Department of Anesthesiology  
 Department of Anatomy and Medical Education  
 Department of Emergency Medicine  
 Department of Family Medicine  
 Department of Internal Medicine  
 Department of Molecular and Cellular Biochemistry  
 Department of Molecular Virology, Immunology,  
 and Medical Genetics  
 Department of Neurology  
 Department of Neuroscience  
 Department of Obstetrics and Gynecology  
 Department of Ophthalmology  
 Department of Otolaryngology  
 Department of Pathology  
 Department of Pediatrics  
 Department of Pharmacology  
 Department of Physical Medicine and Rehabilitation  
 Department of Physiology and Cell Biology  
 Department of Psychiatry  
 Department of Radiology  
 Department of Surgery  
 School of Allied Medical Professions  
 School of Biomedical Science  
 School of Public Health



## **College of Nursing**

## **College of Optometry**

## **College of Pharmacy**

## **College of Social and Behavioral Sciences**

Department of Anthropology  
 Department of Economics  
 Department of Geography  
 Department of Political Science  
 Department of Psychology  
 Department of Sociology  
 Department of Speech and Hearing Science  
 School of Journalism and Communication  
 School of Public Policy and Management

## **College of Social Work**

## **College of Veterinary Medicine**

Department of Veterinary Biosciences  
 Department of Veterinary Clinical Sciences  
 Department of Veterinary Preventive Medicine

# Accounting and Management Information Systems

400 Fisher Hall, 2100 Neil Avenue, 292-9368

## 211 Introduction to Accounting U 5

Preparation and use of accounting reports for business entities; focus on uses of accounting for external reporting, emphasizing accounting as a provider of financial information.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H211 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 211 or equiv; Econ 200 or equiv. Not open to students with credit for 201 or equiv. This course is available for EM credit.

## 212 Introduction to Accounting U 5

The uses of accounting reports in management decisions and in control of business operations; focus is on the internal use of accounting information.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H212 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 211 or equiv; and Econ 200 or equiv. Not open to students with credit for 201 or equiv. This course is available for EM credit.

## 310 Foundations of Accounting U 5

A survey of accounting for non-business students; financial statements and analysis; accounting for assets, liabilities and owners equity; and elements of managerial accounting.

Au, Sp Qtrs. 2 2-hr cl. Prereq: Math 130; Econ 200 and Cptr/Inf 100 or equivalents. Not open to students with credit for Acct&MIS 201 or 212 or to students enrolled in the BSBA program. Credit does not count toward the BSBA degree.

## 493 Individual Studies U 1-10

Individual study projects in selected areas in accounting and management information systems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

## 494 Group Studies U 1-10

Group study projects in selected areas in accounting and management information systems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs.

## 501 Accounting and Cost Analysis U G 3

An introduction to financial statement analysis and cost analysis for planning, decision-making, and control.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: Ind Eng 500 and 504 or permission of instructor.

## H519 Honors Managerial Accounting U 5

Cost measurement and estimation in the context of product costing systems; performance evaluation systems, managerial decision problems, and the special problems of nonprofit entities.

Sp Qtr. 5 cl. Prereq: H212 or permission of instructor.

## H520 Honors Financial Accounting U 5

Principles and procedures of accounting for the assets, liabilities, and shareholder equity of an incorporated business.

Au Qtr. 5 cl. Prereq: H519. Not open to students with credit for 521, 522, or 523.

## 521 Financial Accounting I U G 3

Introduction to financial accounting theory and practice; determination of asset and liability valuation and income measurement and its relation to market frictions.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 212 and Bus-Mgt 330 and 331; or permission of instructor.

## 522 Financial Accounting II U G 3

Application of accounting techniques and theory to recording and reporting of financial data; emphasis on collection, summarization, and reporting of data in accordance with generally accepted accounting principles.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 521.

## 523 Financial Accounting III U G 3

Application of accounting theory in complex situations; emphasis on cash flows, leases, error corrections and shareholder's equity.

Wi, Sp Qtrs. 3 cl. Prereq: 522.

## 525 Cost Accounting U G 5

Managerial decision making in organizations with an emphasis on the use of financial data; theory and practice of management control.

Au, Wi, Sp Qtrs. 5 cl. H525 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 521 or 212 and Math 152) and Bus-Mgt 330 and 331; or permission of instructor.

## 531 Introduction to Accounting Information Systems U G 5

The design and control of computer-based accounting information processing systems.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H531 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 212 and Cptr/Inf 200 and Bus-Mgt 330 and 331; or permission of instructor.

## 532 Foundations of Business Information Systems U G 5

Technical foundation in programming interactive business information systems.

Au Qtr. 2 2-hr cl. H532 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 212 and Cptr/Inf 214 and Bus-Mgt 330 and 331; or permission of instructor.

## 624 Advanced Accounting U G 4

Advanced topics in financial reporting including accounting for multi-corporate business entities, international operations, and government and not-for-profit organizations.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H624 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 523 or equiv.

## 626 Tax Accounting I U G 4

Fundamentals of the federal income tax, and how it influences taxpayer decisions. Emphasis is on individuals and businesses organized as proprietorships, but the rules generally applicable to all taxpayers are covered.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H626 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 521 or equiv.

## 627 Auditing Principles and Procedures U G 4

Basic concepts and standards of auditing; audit procedures and working papers; internal and external audit reports.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H627 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 523 or equiv.

## H628 Accounting Research and Practice U G 4

Researching accounting concepts and standards underlying corporate and noncorporate financial statements including consideration of typical accounting problems.

Sp Qtr. 4 cl. Prereq: Sr standing and be enrolled in an Honors Program or permission of instructor. This is a Progress course.

## 634 Topics in Financial Accounting U G 4

Contemporary topics in financial accounting and analysis. Topics may vary.

Sp Qtr. Prereq: 522.

## 635 Topics in Management Accounting U G 4

Advanced topics in management control, strategic interactions within the firm.

Prereq: H519 or 525.

## 636^ Tax Accounting II U G 3

Intensive study of the federal income tax treatment of business corporations and partnerships, with particular attention to tax planning by these businesses and their owners.

Au Qtr. 3 cl. Prereq: 522 and 626 or equiv.

## 646^ Tax Research Seminar U G 3

Case studies requiring an in-depth examination of the tax aspects of situations frequently encountered by businesses and individuals.

3 cl. Prereq: 626 and permission of instructor.

## 651 Analysis and Design of Management Information Systems U G 4

Investigation and application, through real-world projects, of concepts and tools used in the analysis and design of management information systems.

Au Qtr. 2 2-hr cl. Prereq: Cptr/Inf 516 and Bus-Mgt 330 and 331; or permission of instructor.

## 653 Business Data Communications U G 4

Study of technological, economic, and organizational issues concerning computer based networks for business data communications.

Wi Qtr. 2 2-hr cl. Prereq: Jr or sr standing as an Information Systems major in BUS and Bus-Mgt 330 and 331; or permission of instructor.

## 655 Management of Office Information Systems U G 4

Surveys concepts and technologies for modeling, developing, and managing office information systems to enhance office efficiency and productivity.

Sp Qtr. 2 2-hr cl. Prereq: 531 or 532 or Cptr/Inf 570 and Bus-Mgt 330 and 331; or permission of instructor.

**657 Decision Support and Expert Systems U G 4**

Study of computer-based systems designed to support decision-making within the organization.

Sp Qtr. 2-2-hr cl. Prereq: Cptr/Inf 516 and Bus-Mgt 330 and 331; or permission of instructor.

**659 Information Systems Planning and Management U G 4**

Planning and management of the information system function in business organizations with emphasis on the problems involved.

Wi Qtr. 2-2-hr cl. Prereq: Cptr/Inf 200 and 214, sr or grad standing, and Bus-Mgt 330 and 331; or permission of instructor.

**693 Individual Studies U G 1-10**

Individual study projects in selected areas of accounting and management information systems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-10**

Group study projects in selected areas of accounting and management information systems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**711 Financial Accounting U G 4**

A survey of the principles and methods by which financial information about an organization is collected and processed for external users; analyses and interpretation of financial data.

Su, Au, Sp Qtrs. 2-2-hr cl.

**H783 Honors Research U 1-5**

Special topics research in accounting and/or management information systems; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 cumulative pt-hr ratio, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This is a Progress course.

**803 Foundations of Accounting G 5**

Fundamental accounting concepts and theory; emphasis on information content approach by examining the structure, language and comparative advantage of accounting reports as an information source.

Au Qtr. 2-2-hr cl. Prereq: Enrollment in Master of Accounting Program or permission of instructor.

**804 Professional Research in Accounting G 5**

Research and communication skills in a professional accounting context; learn to use various accounting information resources; enhance communication and teamwork skills through collaborative exercises.

Sp Qtr. 2-2-hr cl. Prereq: Enrollment in Master of Accounting Program or permission of instructor.

**811 Management Accounting G 3**

An examination of the use of accounting information in managing an organization; cost determination and analysis; economic decision-making business planning and control over operations and property.

2 1.5-hr cl. Prereq: 711 or equiv. Not open to grad students in accounting.

**823 Managerial Accounting for Decision Making G 4**

Cost systems with emphasis on the appropriate application of system outputs to management decisions.

Sp Qtr. 2-2-hr cl. Prereq: 811 or MBA 801 or 802 or permission of instructor.

**824 Corporate Financial Reporting G 4**

An examination of major aspects of corporate financial reporting by management under generally accepted accounting principles including coverage of disclosures required for traded securities, tax aspects of mergers and acquisitions, auditing of business financial reports, and impacts of financial reporting on managerial behavior, financial analysis, and auditing.

Wi Qtr. 2-2-hr cl. Prereq: 811 or MBA 801 or 802 or permission of instructor.

**825 Advanced Accounting Analysis for the Controllorship Function G 5**

Examination and study of accounting from perspective of the controller of a firm, with emphasis on "why" of modern costing practices instead of "how to".

Wi Qtr. 2-2-hr cl. Prereq: Enrollment in Master of Accounting program (degree code 006) or permission of instructor.

**826 Tax Planning for Managerial Decision Making G 4**

Examination of the impact of taxes on several important business decisions; recognition of tax problems and planning opportunities.

Wi Qtr. 2-2-hr cl. Prereq: 811 or MBA 801 or 802 or permission of instructor.

**827 Management Control Systems G 4**

Aspects of organizations impacting the design, implementation, and revision of management control systems for private and public enterprises including discussion of responsibility centers, transfer pricing, planning, budgetary reporting, incentive compensation, operational auditing, and the impact of taxation on decision-making.

Sp Qtr. 2-2-hr cl. Prereq: 811 or MBA 801 or 802 or permission of instructor.

**828 Financial Information and Valuation G 4**

Valuation of securities, companies and debt using accounting based models of valuation such as price-to-book models, price-to-earnings models, earnings forecasts and EVA.

Au Qtr. 2-2-hr cl. Prereq: MBA 810 or 811.

**829 Financial Accounting Analysis G 4**

Analyze the ability of accrual accounting to provide relevant statistics in an uncertain economic environment.

Wi Qtr. 2-2-hr cl. Open only to MBA students.

**834 Corporate Information Systems Management G 4**

Case studies of the impacts of information technology on business organizations and its effective planning and control.

Wi Qtr. 2-2-hr cl. Prereq: MBA 831 or 832 or permission of instructor.

**835 Systems Analysis and Design for Managers G 4**

Practical experience in software development for managers of business systems.

Au Qtr. 2-2-hr cl. Prereq: MBA 831 or 832.

**837 Management of Corporate Data Resources G 4**

Investigation of concepts and techniques for data management with emphasis on planning and administrative issues and on the linkage between data and corporate strategy.

Au Qtr. 2-2-hr cl. Prereq: MBA 831 or 832.

**838 Emerging Technologies and Electronic Commerce G 4**

Provide an understanding of the opportunities, potential threats and important issues surrounding electronic commerce and emerging technologies.

Sp Qtr. 2-2-hr cl. Prereq: MBA 831 or 832.

**844^ Financial Accounting Theory G 3**

Intensive study of theories of income measurement and asset valuation.

2 1.5-hr cl. Prereq: 524 or written permission of instructor.

**845 Controllorship G 3**

The accounting executive's role in the management of an enterprise; accounting data for planning, coordination, control, and protection.

Sp Qtr. 3 cl. Prereq: 811 or written permission of instructor.

**852 Governmental and Non-Profit Accounting G 3**

The application of accounting principles to governments and other not-for-profit entities; problems relating to funds, appropriations, and budgetary controls.

Au Qtr. 3 cl. Prereq: 711 or equiv or permission of instructor. Cross-listed in Public Policy and Management.

**861 Seminar in Accounting G 5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs.

**893 Individual Studies G 1-6**

Individual study projects in related areas in Accounting and Information Systems.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Open only to graduate students. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-5**

Group study projects in selected areas of accounting and management information systems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable.

**998 Research in Accounting: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research in Accounting: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Aeronautical and Astronautical Engineering

328 Harold A. Bolz Hall, 2036 Neil Avenue Mall, 292-2691

### 200 Introduction to Aerospace Engineering I U 5

Introduction to aerospace design, with emphasis on aerodynamics and aircraft performance.

Au Qtr. 4 cl, 1 2-hr lab. Prereq or concur: Math 152, Physics 131, and a minimum cumulative pt-hr ratio of 2.00. This course is available for EM credit.

### 201 Introduction to Aerospace Engineering II U 5

Introduction to aircraft stability; propulsion integration; introduction to astronautics.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 200 and a minimum cumulative pt-hr ratio of 2.00. This course is available for EM credit.

### 405 Thermodynamics U 4

Introduction to the properties and behavior of aerodynamic fluids from microscopic and macroscopic points of view.

Sp Qtr. 4 cl. Prereq: 201.

### 414 Applications of Differential Equations in Aerospace Engineering U 2

Applications of differential equation methods learned in Math 414 to problems arising in aerospace engineering.

Sp Qtr. 2 cl. Prereq: 201, Math 254. Concur: Math 414. Open only to students who are enrolled in Math 414.

### 510 Aerospace Laboratory

Laboratory demonstrations and experiments in aerodynamics, aeroelasticity, propulsion, and structures of flight vehicles.

1 4-hr lab. Open only to Aero Eng majors. GEC courses.

#### 510.01 Aerospace Laboratory I U 2

Laboratory experiments in structures, dynamics and control.

Au Qtr. Prereq: 542, 581 and a second writing course.

#### 510.02 Aerospace Laboratory II U 2

Laboratory experiments in gas dynamics and propulsion.

Wi Qtr. Prereq: 530, 550, 560 and a second writing course.

#### 510.03 Aerospace Laboratory III U 2

Laboratory experiments in data acquisition, signal processing and aerodynamics.

Sp Qtr. Prereq: 520, 560, 581 and a second writing course.

### 512 Systems Integration I U 1

Integration of material from structures, fluids and dynamics courses by means of industrially relevant design projects.

Au Qtr. 1 2-hr lab. Concur: 520, 530, 542. This is a Progress course. 3 quarter sequence. Credit will be awarded upon completion of 514.

### 513 Systems Integration II U 1

Integration of material from structures, fluids and dynamics courses by means of industrially relevant design projects. Continuation of 512.

Wi Qtr. 1 2-hr lab. Concur: 521, 543, 560. This is a Progress course. 3 quarter sequence. Credit will be awarded upon completion of 514.

### 514 Systems Integration III U 1

Integration of material from heat transfer and propulsion courses by means of industrially relevant design projects. Continuation of 513.

Sp Qtr. 1 2-hr lab. Concur: 550, 570, 581, Elec Eng 300. 3 quarter sequence. Credit for 512 and 513 will be awarded upon completion of 514.

### 515 Preliminary Design of Flight Vehicles I U 2

Beginnings of preliminary design, methodology, case studies, group planning for subsequent design effort.

Au Qtr. 2 2-hr labs. Prereq: 521, 543, 550, 560.

### 516 Preliminary Design of Flight Vehicles II U 3

Continuation of preliminary design from Aero Eng 515. Students learn to utilize CAD and other computational tools as a part of the design process.

Wi Qtr. 2 3-hr labs. Prereq: 515.

### 517 Detailed Design of Flight Vehicles U G 3

Detailed design of aerospace vehicle components.

Sp Qtr. 2 3-hr labs. Prereq: 515, 516. Not open to students with credit for 544.

### 5 J Design of Flight Vehicles U 3

Continued design work on vehicle developed in 516.

Sp Qtr. 3 2-hr labs. Prereq: 516. Not open to students with credit for 416.

### 520 Flight Vehicle Dynamics U G 4

Introduction to the concept of dynamic stability and to the dynamics of rigid aircraft and satellite vehicles.

Au Qtr. 4 cl. Prereq: 201, Mech Eng 430.

### 521 Linear Systems Engineering U G 4

Analysis of a flight vehicle from a systems point of view. Free and forced response. Introduction to closed-loop and open-loop systems.

Wi Qtr. 4 cl. Prereq: 520, Math 571.

### 530 One-Dimensional Gasdynamics U G 4

One-dimensional gasdynamics, including flow with friction and heat conduction, but with an introduction to oblique shocks and Prandtl-Meyer flows.

Au Qtr. 4 cl. Prereq: 201, 405.

### 542 Flight Vehicle Structures I U G 4

Load distributions, temperature distributions, and allowable stresses for flight vehicle structures; derivations of basic equations for analysis of flight vehicle structural components.

Au Qtr. 4 cl. Prereq: Mech Eng 410, Math 571.

### 543 Flight Vehicle Structures II U G 4

Stress analysis of flight vehicle structures.

Wi Qtr. 4 cl. Prereq: 542.

### 550 Principles of Flight Vehicle Propulsion U G 4

Fundamentals of aerospace propulsion including engine cycles and analysis of various air-breathing engines and rocket engines.

Sp Qtr. 4 cl. Prereq: 530.

### 560 Fundamentals of Aerodynamics U G 4

Fundamentals of low- and high-speed inviscid aerodynamics.

Wi Qtr. 4 cl. Prereq: 530, 414.

### 561 Advanced Aerodynamics U G 3

Advanced elements of aerodynamics in low- and high-speed flow.

Au Qtr. 3 cl. Prereq: 530, 560, and 570.

### 570 Viscous Flow and Heat Transfer U G 4

Fundamentals of viscous flow, laminar and turbulent boundary layers, aerodynamic heating, effects of body forces and elements of radiative transfer.

Sp Qtr. 4 cl. Prereq: 414, 560.

### 580 Analytical Methods in Aeronautical and Astronautical Engineering U G 4

Application of selected topics in mathematics to analysis in the field of aeronautical and astronautical engineering.

Au Qtr. 4 cl. Prereq: 202 and Math 415 and 568.

### 581 Numerical Methods in Aerospace Engineering U 3

Application of numerical methods to selected topics in the field of aerospace engineering.

Sp Qtr. 3 cl. Prereq: En Graph 167, Math 414 or equiv, Math 571.

### 612 Aircraft Flight Test Engineering U G 4

A determination of the performance, stability, controllability, and handling qualities of general aviation aircraft through flight tests.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 520 and 560, or equivalents with permission of instructor.

### 615 Introduction to Computational Aerodynamics U G 4

Introduction to computational methods used in aerodynamic flow problems; applications to airfoil analysis and design.

Wi Qtr. 4 cl. Prereq: 560, 581 and En Graph 167, or equivs.

### 616 Advanced Aerospace Vehicle Design U G 3

Configuration formulation, performance and analysis, propulsion system design and integration, material selection, structural efficiency, CAD/CAM, computer simulations.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 518, 516 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

### 620 Automatic Control of Aerospace Vehicles I U G 3

Control theory as applied to analysis and design of flight control systems; components of automatic flight control systems.

Wi Qtr. 3 cl. Prereq: 520, 543, 521 and Elec Eng 300.

### 621 Aircraft and Spacecraft Automatic Control Systems II U G 4

Control theory as applied to analysis and design of control systems for complex flight structures; interaction between structural flexibility and control systems.

Wi Qtr. 4 cl. Prereq: 520, 521.

**626 Orbital Mechanics U G 3**

Satellite orbit analysis and interplanetary missions.  
Au Qtr. 3 cl. Prereq: 201, 520, 521, Mech Eng 430.

**645 Introduction to Structural Dynamics of Aerospace Vehicles U G 3**

Dynamics of flexible aircraft and spacecraft, introduction to aeroelastic phenomena, modal methods, computer implementation and simulation of motion.

Sp Qtr. 3 cl. Prereq: 521, 543, 560, Mech Eng 430.

**693 Individual Studies in Advanced Aerospace Engineering U G 2-10**

Individual studies on advanced topics in aerospace engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies in Aerospace Engineering U G 1-15**

Group studies on special topics in aerospace engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs.

**720 Stability and Control of Flight Vehicles U G 4**

Modern methods of system response analysis, root-locus analysis, and Liapunov stability analysis.

Sp Qtr. 4 cl. Prereq: 520, 521.

**745\* Aeroelasticity I U G 4**

Dynamic loads analysis of elastic flight vehicles subjected to unsteady airloads.

Sp Qtr. 4 cl. Prereq: 521, 543 and 560.

**751\* Advanced Propulsion U G 4**

Characteristics and performance of air breathing flight vehicle power plants and their components (inlets, turbo-machinery, combustors, and expansion nozzles).

Au Qtr. 4 cl. Prereq: 550.

**752 Rocket Propulsion U G 3**

A discussion of all propulsion types for space flight: liquid, solid, hybrid, nuclear and electric. Emphasizes fundamentals of each technique, and trade-offs in engine selection and design.

Sp Qtr. 3 1-hr cl. Prereq: 550.

**760 Advanced Compressible Flow U G 4**

Two-dimensional supersonic flow theories.

Sp Qtr. 4 cl. Prereq: 561 or equiv.

**771 Aerodynamics of Viscous Compressible Flows U G 4**

Analysis of laminar boundary layers in high speed flows. Introduction to interacting boundary-layer theory and triple-deck theory, three-dimensional boundary layers.

Wi Qtr. 4 cl. Prereq: 570.

**775\* Hypersonic Flows I U G 4**

Introduction to the analysis of inviscid hypersonic flow fields.

Au Qtr. 4 cl. Prereq: 561.

**800 Theory of Deformation and Flow G 3**

General treatment of the basic principles underlying the mechanics of deformable media from macroscopic point of view.

Au Qtr. 3 cl. Prereq: 543, 560, and 570 or equiv. Required of all first yr grad students.

**801 Deformation of Aerospace Structures G 3**

Application of the unifying theories and principles of solid and fluid mechanics to vehicular structures with emphasis on aerospace structures.

Wi Qtr. 3 cl. Prereq: 800.

**802 Analytical Methods in Engineering I G 4**

Advanced methods for solution of partial differential equations with applications to fluid dynamics and heat transfer; topics include Green's function, integral transforms and asymptotic solutions.

Wi Qtr. 4 cl. Prereq: 560, 414 or equivs.

**803 Analytical Methods in Engineering II G 3**

Continuation of 802 with emphasis on the solution of singular perturbation problems.

Sp Qtr. 3 cl. Prereq: 802.

**805 Aerodynamics of Chemically Reacting Fluids G 3**

The aerodynamics of one-dimensional compressible flow with chemical reactions and wave propagation.

Au Qtr. 3 cl. Prereq: 800.

**810 Flight Vehicle Performance Analysis G 3**

Analysis of flight vehicle performance in planetary atmospheres.

Au Qtr. 3 cl. Prereq: 550 and 761.

**820 Advanced Flight Vehicle Stability and Control G 3**

Advanced studies in stability of systems, non-linear systems, Liapunov method, dynamics in extra-terrestrial atmospheres, new control methods.

Wi Qtr. 3 cl. Prereq: 720.

**842\* Advanced Structures for Flight Vehicles G 3**

Advanced analysis and design of aircraft structures and/or structural components including thermal, inelastic, and buckling effects.

Sp Qtr. 3 cl. Prereq: 543, 800.

**844 Optimal Aerospace Structural Design G 3**

Optimal design of aircraft and spacecraft structural components; emphasis on the issues of mathematical modeling of design problems for optimization and solution search techniques.

Sp Qtr. 2 1.5-hr cl. Prereq: 542, 543, and 801. Not open to students with credit for 842 given in Spring Qtrs 1990-94.

**850 Non-Equilibrium Flow Dynamics G 3**

Relaxation, dissociation, waves (sound, shock) nozzle flow and design collisional energy transfer in gases.

Sp Qtr. 3 cl. Prereq: 530 or equiv.

**851 Advanced Propulsion Problems G 3**

Combustion instability, free radicals as energy source, space propulsion problems, noise of exhaust jets, energy conversion, solid propellants, heat transfer in rocket engines, and cascade theory.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 751. Repeatable to a maximum of 9 cr hrs.

**860\* Advanced Topics in Aerodynamics G 3**

Topics to include unsteady aerodynamics, transient wave phenomena, interactive and separated flow, transonic flows.

Au Qtr. 3 cl. Prereq: 760. Repeatable to a maximum of 6 cr hrs.

**865\* Advanced Viscous Flow Theory G 3**

Three-dimensional viscous flow at low and high Reynolds number; stability theory; statistical theories of turbulence.

Wi Qtr. 3 cl. Prereq: 771 and 800.

**866\* Hydrodynamic Stability of Fluid Motions G 4**

Instability of inviscid and viscous parallel flows; thermal and centrifugal instability boundary-layer transition; and concepts of linear, nonlinear, and secondary instability analysis.

Sp Qtr. 4 cl. Prereq: 570, 800 or equiv, or permission of instructor. Not open to students with credit for Mech Eng 866. Cross-listed in Mechanical Engineering.

**868 Molecular Theory of Gas Flows G 3**

Theory of gas flows from molecular points of view.

Au Qtr. 3 cl. Prereq: 800 concur.

**873\* Computational Fluid Dynamics G 4**

Advanced numerical methods for solving Navier-Stokes equations as well as equations for inviscid and boundary layer flows.

Sp Qtr. 4 cl. Prereq: 615 or Mech Eng 707. Not open to students with credit for Mech Eng 811. Cross-listed with Mechanical Engineering 811.

**875 Introduction to Turbulence G 3**

Turbulence theory fundamentals and tools used to understand the physical mechanisms involved and their application to modeling and experiment.

Sp Qtr. 3 cl. Prereq: 560, 570, 800 or permission of instructor. Not open to students with credit for Mech Eng 813 and Chem Eng 815.09. Cross-listed with Mech Eng 813 and Chem Eng 815.09.

**880 Seminar G 1**

Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 15 cr hrs. Required of all grad students in aero eng. This course is graded S/U.

**889 Advanced Topics in Aeronautical and Astronautical Engineering G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies in Aeronautical and Astronautical Engineering G 1-15**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**999 Research in Aeronautical and Astronautical Engineering G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## African-American and African Studies

486 University Hall, 230 North Oval Mall, 292-3700

See also Hausa, Shona, Swahili, Twi, Yoruba, and Zulu.

### Social Problems

See Sociol 202. Offered in cooperation with African-American and African Studies.

### Introduction to African-American Literature

See English 281. Offered in cooperation with African-American and African Studies.

### American Ethnic Relations

See Sociol 380. Offered in cooperation with African-American and African Studies.

### Racial and Ethnic Differentiation

See Sociol 780. Offered in cooperation with African-American and African Studies.

### 101 Introduction to African-American and African Studies U 5

Introduction to the impact of broad historical forces such as colonization and capitalist slavery on race relations; the interdependence of ideology and social structure.

Su, Au, Wi, Sp Qtrs. 3 cl, 2 1-hr labs. GEC soc sci individuals and groups course.

### 121 African Civilizations to 1870 U 5

Exploration of the political, social, and economic history of precolonial African civilizations, using a variety of interdisciplinary approaches and materials.

Su, Au, Wi, Sp Qtrs. 2 2-hr or 5 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for History 121. Cross-listed in History. GEC historical survey course.

### 122 African Civilizations, 1870 to the Present U 5

Exploration of the political, social, and economic history of the colonial and independent African countries, using a variety of interdisciplinary approaches and materials.

Su, Au, Wi, Sp Qtrs. 2 2-hr or 5 cl. Prereq: 121 or History 121. Not open to students with credit for History 122. Cross-listed in History. GEC historical survey course.

### 154 Introduction to African American Literature U 5

Survey of the literature of African descendants in the United States from 1750 to 1915.

Au Qtr. 2 2-hr or 5 cl. GEC arts and hums lit course.

### 208 Small Ensembles

Au, Wi, Sp Qtrs. 2 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. Each decimal subdivision repeatable to a maximum of 18 cr hrs. VPA Admis Cond course.

#### 208.20 African Performing Ensemble U 1

1 2-hr cl. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.20, and Music 199.20 and 208.20. Cross-listed in Music.

### 218 Black Urban Experience U 5

Examination of the major social science literature which analyzes the black urban experience.

2 2-hr cl. Repeatable to a maximum of 10 cr hrs. GEC soc sci individuals and groups course.

### 222^ Economic Problems of Black America U 5

Economic problems of black Americans including economic history, job opportunities, income, consumer purchases, housing, business enterprises. 5 cl. Prereq: 5 cr hrs in econ or permission of instructor. SS Admis Cond course.

### 230 The Black Woman: Her Role in the Liberation Struggle U 5

The political role of the black woman in the struggle for black freedom; examination of changing laws and customs affecting the status of black women.

Au, Wi, Sp Qtrs. 3 cl. GEC social diversity course.

### 244 Survey of African and African-Derived Music in the Western World U 3

An introduction to traditional African music and its role in the history and development of African-American music with its concomitant socio-political milieu.

Au, Wi Qtrs. 3 cl. Not open to students with credit for Music 244. Cross-listed in Music. VPA Admis Cond course.

### 251 Introduction to African Literature U 5

An assessment of the oral prose tradition and written prose of African literature; specific emphasis placed on student reading from primary sources.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. GEC arts and hums lit course.

### 254 Themes in African-American Literature U 5

Survey of themes in the literature of African descendants in the United States from 1915 to present.

Wi Qtr. 2 2-hr cl. GEC arts and hums lit course.

### 255 African-American Life through Autobiographies U 5

The experiences of black people in America as revealed in autobiographies of African-Americans.

2 2-hr cl.

### 261 Black-White Behavior U 5

A survey of the social significance of important behavioral elements affecting black-white relations.

Au Qtr. 5 or 2 2-hr cl. SS Admis Cond course.

### 271 Contemporary Black Drama U 5

A literary analysis and discussion of plays by black playwrights in recent times.

Au Qtr. 2 2-hr cl. GEC arts and hums lit course. VPA Admis Cond course.

### 272^ Theatre Practice in Black Drama U 5

Local performance of selected black drama.

2 2-hr cl. Prereq: Permission of instructor. VPA Admis Cond course.

### 282^ Major Themes in African and African-American Cultures and Civilizations U 5

A broad and comprehensive survey of the cultures and heritage of Africans and African-Americans.

2 2-hr cl. SS Admis Cond course.

### 290^ Workshop in Visual Communication U 5

The study, analysis, and evaluation of the visual environment of the black community.

2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

### 293 Individual Studies U 1-5

Exploration of relevant subject as individually designed by student and professor.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 294 Group Studies U 1-5

Groups of students are given an opportunity to pursue special studies not otherwise offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 305 Sociolinguistics of African-American English U 5

Overview of the history and structure of African-American vernacular English and its relationship to socio-cultural organization in the African American community.

Sp Qtr. 3 1.5-hr cl. Not open to students with credit for Linguist 305. Cross-listed in Linguistics.

### 322^ Black Consumer Economics U 5

Economic problems faced by black Americans in their purchases of goods and services.

5 cl. Prereq: 222 and 5 cr hrs of econ; or permission of instructor.

### 323 History of African-Americans

2 2-hr cl. Cross-listed in History.

#### 323.01 History of African-Americans in the Age of Slavery U 5

Origins of modern slavery; its development in the U.S.; the evolution of African-American life and culture from 1619 to the end of the Civil War.

Au, Wi Qtrs. Not open to students with credit for 223 or 345; or History 223, or 260.

#### 323.02 History of African-Americans from Emancipation to the Present U 5

The rise of debt peonage among blacks; the formation of the northern ghetto; the Civil Rights Movement and beyond.

Au, Wi Qtrs. Not open to students with credit for 224, 238, or 345; or History 224, 260, or 323.02.

### 326 Black Americans and the Legal System U 5

An examination of the role of the legal system in the social and political dynamics of blacks in American society.

Su, Au, Sp Qtrs. 2 2-hr cl.



**327 Introduction to African Politics U 5**

Examination of dynamics of nation-building in African countries in transition from colonial dependencies to modern nation-states.

Au Qtr. 2 2-hr cl.

**335 Philosophical Perspectives on Issues of Race U 5**

An examination of philosophical issues concerning race including an examination of the concepts of race and racial identity, the nature of racism, and the relationship between race, gender, and class.

Wi Qtr. 5 cl. Not open to students with credit for Philos 335. Cross-listed in Philosophy. GEC arts and hums cultures and ideas, and social diversity course.

**338^ African Territories as Nation-States: Selected Case Studies U 5**

Case studies of selected African territories gaining independence in the aftermath of the Second World War.

5 cl.

**342 Music, Religion, and Ritual in Africa U 5**

Survey of musical and religious expressions in selective African societies, focusing on traditional contexts and contemporary Christian contexts.

Sp Qtr. 2 2-hr cl. Prereq: 101 or Music 140 or permission of instructor. GEC arts and hums cultures and ideas course.

**345 Early African-American Thinkers U 5**

Designed to acquaint students with race, gender, class, nationality, and other ideologies embedded in American political and social institutions.

Au, Wi Qtrs. 2 2-hr cl. Not open to students with credit for 545. GEC arts and hums lit course.

**350^ History of Modern Africa U 5**

General survey of political, economic, and social developments in colonial and post-independence Africa.

Sp Qtr. 5 cl or 2 2-hr cl. Prereq: One 10-hr GEC historical survey sequence or permission of instructor. Not open to students with credit for History 350. Cross-listed in History.

**352 African-American Cultural and Intellectual Tradition U 5**

Salient themes in the experience of the black man in America including slavery and bondage, emancipation, integration, and revolt.

Wi Qtr. 2 2-hr cl.

**361 Psychology of the Black Experience U 5**

An analysis of personality theories commonly applied to black Americans and the black experience.

Wi Qtr. 5 or 2 2-hr cl.

**367 Second Writing Course**

Prereq: English 110 or 111 or equiv, and soph standing. GEC second writing and social diversity courses.

**367.02 African-American Theatre History U 5**

Examination of the aesthetic and sociological evolution in America of African-American theatre and its literature.

Au Qtr. 2 2-hr cl. Not open to students with credit for Theatre 367.02. Cross-listed in Theatre.

**367.03 African-American Voices in U. S. Literature U 5**

Discussion, analysis, and writing about issues presented through the diverse voices of African-American literature.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for English 367.03. Cross-listed in English.

**367.04 Black Women Writers: Text and Context U 5**

Writing and analysis of black women's literary representations of issues in United States social history.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for Wom Stds 215 or 367.04. Cross-listed in Women's Studies.

**375^ Early African-American Art U 5**

The work of African-American artists prior to 1920.

Sp Qtr. 2 2-hr cl.

**378 History of Jazz I U 5**

An in-depth study of the periods, trends, major performers/composers, styles and influences of jazz from its beginnings through the Swing era.

Wi Qtr. 2 2-hr cl.

**379 History of Jazz II U 5**

Continuation of 378 from Bop through current styles.

Sp Qtr. 5 cl.

**385 Southern Africa: Society and Culture****385.01 Southern Africa: Society and Culture U 5**

A study of the social and cultural developments in Southern Africa, and the environment.

Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for 385. GEC arts and hums cultures and ideas course.

**385.02 Southern African Study Tour U 3**

A study tour of Southern Africa to accompany 385.01.

Sp Qtr. Arr 3-week study tour of Southern Africa. Prereq: 385.01 and permission of instructor. Not open to students with credit for 385. Students will pay all travel and subsistence costs.

**391^ Historical Geography of Black America U 5**

A study of the spatial effects of migration, segregation, and regionalization in America.

2 2-hr cl.

**395^ The Theory and Praxis of a Black Studies Paradigm U 5**

Introduction to the various methodologies that have been employed in the conceptualization and implementation of the transdisciplinary paradigm of black studies.

2 2-hr cl. Prereq: 101, one of the 367 decimals, and Rank 2 standing or higher.

**451^ Black Experience in Caribbean, African, and African-American Literatures U 5**

Exploration of themes, attitudes, and parallels in black literatures of Africa, the United States, and the Caribbean; emphasis on negritude and Pan-Africanism.

Wi Qtr. 2 2-hr cl. Prereq: Jr or sr standing.

**452^ Swahili Literature I U 5**

Introduction to oral and classical Swahili literature in light of modern theories of literary analysis, criticism, and appreciation.

2 2-hr cl. Prereq: Swahili 104. GEC arts and hums lit course.

**453^ Swahili Literature II U 5**

An introduction to the origins and development of Swahili literature with emphasis on the novel, the play, and modern verse.

2 2-hr cl. Prereq: Swahili 104. GEC arts and hum lit course.

**460^ Political Thought in African Literature U 5**

A study of political thought of selected African novelists in the 20th century.

2 2-hr cl.

**504 Black Politics U 5**

Economic, political, and social constraints on the development of black political power; the efforts made by black people in recent times to organize for effective political action.

2 2-hr cl. Not open to students with credit for Polit Sc 208 or 504. Cross-listed in Political Science.

**527 Pan-Africanism and Nationalism U G 5**

Pan-Africanism and nationalism in the development of Africa.

Au Qtr. 2 2-hr cl.

**530^ African Political Systems: A Comparative Analysis U G 5**

A comparative examination of problems of nation-building and national integration faced by selected African nations in the postcolonial period.

5 cl.

**549 Historical Evolution of the Black Community U G 5**

The political, social, and economic background of the contemporary American black community.

2 2-hr cl.

**551 Selected Topics in African-American and Related Literatures U G 5**

Topics selected will relate to specific interests of enrolled students, who will develop an intensive analysis of the topic of their choice.

Au Qtr. 5 cl. Prereq: 251 or 351. GEC arts and hums lit and social diversity course.

**552 Contemporary African-American Culture U G 5**

African-American culture in 20th-century America.

2 2-hr cl.

**555 Topics in African-American History**

Selected topics in African-American history from the origins of slavery to the present.

2 2-hr cl. Prereq: One 10-hr GEC historical survey sequence and jr or sr standing, or permission of instructor. Each decimal subdivision repeatable to a maximum of 10 cr hrs, including cr hrs earned in History 555.01 and 555.02. Cross-listed in History.

**555.01^ Topics in African-American History I U G 5**

Selected topics in African-American history from the origins of African-American culture and slavery to emancipation.

Wi Qtr. Repeatable to a maximum of 10 cr hrs.

**555.02^ Topics in African-American History II U G 5**

Selected topics in African-American history from emancipation through segregation, and the Civil Rights Movement to the present.

Sp Qtr. Repeatable to a maximum of 10 cr hrs.

**571 Images of Black People in Media Production U G 5**

The historical background of black drama in the media; development of new models for monitoring programming; the writing and production of drama.  
Sp Qtr. 2 2-hr cl. Prereq: Jr or sr standing.

**580^ Contemporary African-American Leaders U 5**

The evolution of black leadership after World War II, from non-violence to black nationalism.  
Au Qtr. 2 2-hr cl.

**581 Philosophy in Contemporary African Literature U 5**

Discussion of African social and political thought as presented by selected African novelists.  
2 2-hr cl.

**582^ Studies in African-American Literature U 5**

Topic varies; examples: Neo-slave narratives; the Harlem Renaissance; literature by African-American women.  
2 2-hr cl. Prereq: English 110 or 111 or equiv. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in English 582. Cross-listed in English.

**H584 Literature and Modern Experience in Africa U 5**

A comprehensive view of the dominant thematic directions of African literature in the European languages, and their formal realization in aesthetic and symbolic terms.  
Wi Qtr. 2 2.5-hr cl. Prereq: Any GEC second writing course (367) and enrollment in an honors program.

**595^ Theorizing Race U G 5**

Introduction to issues of "race," consideration of the historical emergence and development of ideas of "race" and of racist practices, along with their contemporary formations.  
22-hr cl. Prereq: GEC second writing course, 395 or Philos 230, or permission of instructor. Not open to students with credit for Philos 595. Cross-listed in Philosophy.

**605 An Introduction to African-American English G 5**

Introduction to the structure and history of the varieties of English used by African-Americans and the relationship between language use and socio-cultural context.  
Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor; Linguist 201 or equiv recommended. Not open to students with credit for Linguist 605. Cross-listed in Linguistics.

**630 Black Political Movements and Organizations U G 5**

Analysis of black political movements and organizations from slavery to contemporary times.  
Au Qtr.

**632 Law, Politics and Human Rights in Africa U G 5**

An examination of the interplay of law and politics in contemporary Africa, and the place of human rights in the emerging order.  
Su, Sp Qtrs. 2 2-hr cl. Prereq: Jr, sr, or grad standing; or permission of instructor.

**633 Black Community Politics: Welfare and Poverty U G 5**

Welfare and poverty as social, economic, and political problems of the black community.  
Sp Qtr.

**643^ History of Islam in Africa U G 5**

An examination of the history and spread of Islam in Africa and its impact on African social, economic, and political institutions.  
2 2-hr cl. Prereq: 121 or 122, or History 121 or 122; or grad standing. Not open to students with credit for History 643.

**650 Introduction to Language and Society in Africa G 5**

A survey of the interplay between languages and society in the African context.  
Sp Qtr. 1 3-hr cl.

**669^ Slavery in Comparative Context U G 5**

Different forms of slavery and other forms of unfree labor in different cultures, focusing mainly on Europe, the Americas, and Africa.  
2 2-hr cl. Not open to students with credit for History 669.

**672 Central African History U G 5**

Specific themes on central African history.  
3 cl. Prereq: 122 or History 122 or grad standing or permission of instructor. Not open to students with credit for 636 or History 672.

**673^ West African History U G 5**

An examination of the processes of state formation, trade, and civilization in Africa's Sudanese and Guinean regions.  
2 2-hr cl. Prereq: 122 or History 122 or grad standing or permission of instructor. Not open to students with credit for 538 or History 673.

**674^ Africa Before Colonial Rule U G 5**

An examination of pre-colonial political, economic, and social systems, including material culture and agriculture.  
2 2-hr cl. Prereq: 122 or History 122 or grad standing or permission of instructor. Not open to students with credit for 611 or History 674.

**675^ History of South Africa U G 5**

An examination of the political and social developments in South Africa from the nineteenth century to the present.  
Au Qtr. 2 2-hr cl. Not open to students with credit for 537 or History 675.

**678^ History of East Africa U G 5**

An advanced survey of the history of East Africa (Kenya, Tanzania, Uganda, Rwanda, Burundi) from the precolonial through the contemporary era.  
2 2-hr cl. Prereq: 122 or History 122 highly recommended for undergrads. Not open to students with credit for History 678.

**690 African-American Children and Youth U G 5**

Study of the social-psychological development of African-American children.  
Wi Qtr. 2 2-hr cl. Prereq: Jr, sr, or grad standing.

**691 Black American Family U G 5**

History of the black American family: origins, myths, and realities.  
Au Qtr. 2 2.5-hr cl. Prereq: 101 or permission of instructor.

**693 Individual Studies U G 1-5**

Individual reading or research projects by special agreement between instructor and student.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**712 Development of the Black Community U G 5**

Rural and urban developments and their effects on black people in America.

**718 Citizen Participation U G 5**

Assessment and application of techniques of organization and action in the black community.  
Sp Qtr. Repeatable to a maximum of 15 cr hrs.

**721^ Economics of Discrimination U G 5**

The economics of racial discrimination with emphasis on black Americans.  
Sp Qtr. Prereq: 10 cr hrs of econ, grad standing, or written permission of instructor.

**725^ Political Development of Sub-Saharan Africa U G 5**

The processes and problems of political change in Sub-Saharan Africa.  
Sp Qtr.

**742 African Historiography and Methodology G 5**

The study of sources, research methods, interpretations, and research trends in the field of African history.  
2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in History 742. Cross-listed in History.

**743 Studies in African History G 5**

The study of the historical literature of Africa and various aspects of African history; topics vary.  
Sp Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in History 743. Cross-listed in History.

**748 Contemporary Art Music Traditions of Africa and the Diaspora G 5**

An examination of selected published and unpublished musical works by contemporary composers of sub-Saharan Africa and of African descent.  
2 1.5-hr cl. Prereq: 101, Music 251 or 672, and grad standing in music; or permission of instructor. Not open to students with credit for Music 748. Cross-listed in Music.

**751^ Introduction to Graduate Studies in African Literature G 5**

A broad survey of the development of African literature, its variations, genres and themes.  
Prereq: Grad standing or permission of instructor.

**752^ Readings in African-American History U G 5**

Readings in the evolution of black culture, economics and family life, race relations, and the emergence of class stratification within the black community.  
1 2.5-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in History 752. Cross-listed in History.

**753 The Discipline of African-American and African Studies G 5**

Critical analysis of the development of African-American and African Studies as a discipline and the theoretical approaches to its subject matter.

2 2.5-hr cl. Prereq: Grad standing or permission of instructor.

**754 Methodological Perspectives in African-American and African Studies G 5**

A critical and transdisciplinary examination of methodological approaches employed in the study of the black experience in its convergent and divergent manifestations across the world.

Su Qtr. 2 2-hr cl. Prereq: Grad standing.

**756 Theorizing Race G 5**

Critical examination of race and race theory perspectives from "the outside" and "the inside" as influenced by nation, class, gender, and imperialism.

Wi Qtr. 2 2.5-hr cl. Prereq: Grad standing or permission of instructor.

**757 Introduction to Graduate Studies in African-American Literature****757.01 Introduction to Graduate Studies in African-American Literature, 1746-1900 G 5**

A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1746 to 1900.

Wi Qtr. 2 2-hr cl. Not open to students with credit for English 757.01. Cross-listed in English.

**757.02 Introduction to Graduate Studies in African-American Literature, 1900 to Present G 5**

A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1900 to the present.

Sp Qtr. 2 2-hr cl. Not open to students with credit for English 757.02. Cross-listed with English.

**762 Mental Health and the Black Community U G 5**

Theoretical and practical approaches to the problems of mental health in the black community.

Wi Qtr. Prereq: 15 cr hrs in social/behavioral sciences or permission of instructor.

**775 Studies in Feminist Theory**

A series of courses which examine the relationships between feminist theories and other significant explanatory systems in the Western cultural traditions.

Sp Qtr. 2 2-hr cl. Prereq: 5 cr hrs in wom stds at the 500 or 600 level, or permission of instructor. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions, including cr hrs earned in Wom Stds 775. Cross-listed in Women's Studies.

**775.03 Feminism and Black Political Thought G 5**

Theoretical analysis of the politics and perceptions of womanhood in the black community.

Repeatable to a maximum of 20 cr hrs. Including cr hrs earned in Wom Stds 775.

**780 Ensembles**

Study and performance of repertoire determined by student's specific ensemble.

**780.20 African Performing Ensemble G 1**

Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Including cr hrs earned in Music 780.20. Cross-listed in Music.

**781 Topics in African Political Philosophy U G 5**

Post-colonial African conceptions of power, freedom, alienation, and cultural identity.

Prereq: Grad standing or written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**782 Modern Black Political Thought U G 5**

The historical development of black political thought from the 19th century to the present.

2 2-hr cl.

**789 Performance Practices in Sub-Saharan African Music G 3**

An examination of compositional choices and performance conventions in selected musical traditions from sub-Saharan Africa.

2 1.5-hr cl. Prereq: Grad standing in music and one of the following courses or equiv: AfAm&ASt 101, or Music 251 or 672; or permission of instructor. Not open to students with credit for Music 789. Cross-listed in Music.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs. Repeatable to a maximum of 15 cr hrs with permission of dept.

**833 Seminar in U.S./Africa Relations G 5**

A critical analysis of selected theories of American foreign policy, with special emphasis on Africa.

Repeatable to a maximum of 10 cr hrs.

**851 Seminar in Critical Approaches to Black Literatures G 5**

A close reading of major literary critical discourses that have shaped and determined the course of black literary production in Africa, North America, and the Caribbean.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing and an introductory course in African-American/African literature; or permission of instructor. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in English 851. Cross-listed in English.

**854 Seminar in Major Black Authors G 5**

An extensive study on the works and ideas of individual writers of the black world.

Sp Qtr. Prereq: Grad standing.

**860 Seminar in Comparative Black Literature G 5**

Topics in African, African-American, and Caribbean literatures.

Repeatable to a maximum of 10 cr hrs.

**865 Black Role Models: Racism and Sexism G 5**

Effects of racism and sexism on the various role models that are prevalent in the black community emphasizing consequences and alternatives.

Prereq: 15 cr hrs in social/behavioral sciences or permission of instructor.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs. With permission of dept.

**998 Research in African-American and African Studies: Thesis G 1-18**

Research for the thesis.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

## Agricultural and Construction Systems Management

200 Agricultural Engineering Building, 590 Woody Hayes Drive, 292-6131

**232 Small Air-Cooled Engines U 4**

Principles of operation, maintenance, and repair of small air-cooled engines.

Su, Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs.

**240 Fabrication of Metal in Agri-business and Agricultural Applications U 4**

Principles and techniques in the fabrication of metal using welding and other processes needed in agricultural and agri-business applications.

Su, Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs.

**241 Building Materials and Construction in Agriculture U 4**

Principles and techniques in the fabrication of wood, concrete, and masonry materials used in agri-business and agricultural applications.

Su, Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs.

**293 Individual Studies U 1-5**

Work on problems not in regular courses; practice in development, organization, solution, and reporting on such problems.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Basic studies in agricultural and construction systems management.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable.

**310 Electric Power for Agricultural and Residential Applications U 3**

Principles and applications of systems and components essential for distribution and control of electricity for power, heat, and illumination in residences and agricultural structures.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: Math 130 or 148.

**320 Facilities for Agricultural and Greenhouse Production U 5**

Buildings and equipment for livestock, crop, and greenhouse production; selection and specification of ventilation systems, waste management alternatives, and construction materials.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Math 130 or 148, Physics 111.

### 360 Agricultural Machine Principles U 5

Principles underlying selection and use of agricultural machines, including power and energy requirements, performance evaluation, calibration, adjustment, and hydraulics.

Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: Math 130 or 148, and Physics 111.

### 370 Principles of Hydrology U 3

Principles of hydrology applied to agricultural and forest watersheds, including applications in drainage, erosion, irrigation, water supply, and water quality.

Sp Qtr. 3 cl. Prereq: Math 130 or 148.

### 371 Land Surveying for Agricultural and Environmental Systems U 2

Principles of land surveying applied to soil and water management on agricultural and environmental areas.

Sp Qtr. 1 1-hr cl, 1 3-hr lab. Prereq: Math 130 or 148.

### 489 Internship in Agricultural and Construction Systems Management U 3-5

Ten or more weeks of planned and coordinated experiences in an agricultural and/or construction business or industry providing pre-approved professional activities in agricultural and construction systems management; written comprehensive report required.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Dept major, permission of faculty advisor and internship advisor along with 12 cr hrs in food, agricultural and biological engineering dept. Repeatable to a maximum of 10 cr hrs.

### 520 Planning Agricultural Facilities U G 3

Application of strategic planning, engineering economics, and farmstead planning techniques to the specification of facilities for agricultural and greenhouse production.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: 320 and Ag Econ 200 or Econ 200.

### 540 Construction Systems U G 3

Principles of planning, interpreting, and estimating as applied to standard construction, including procurement, accounting, logistics, and personnel management.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 241.

### 550 Pollution Control and Waste Utilization U G 3

Management and utilization of animal wastes, fertilizers, pesticides, crop residues, milk and food processing, and farmstead and urban solid wastes to abate environmental pollution at the urban-rural interface.

Sp Qtr. 3 cl. Not open for grad cr to students majoring in food, agricultural, and biological engineering.

### 560 Management of Agricultural Machinery Systems U G 3

Selection and management of complex systems of machines using spreadsheets and computer models to develop and analyze alternatives.

Wi Qtr. 3 cl. Prereq: 360.

### 575 Soil and Water Systems U G 3

Planning and managing drainage, irrigation, erosion prevention, and water storage systems.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 370 and 371, or permission of instructor. Not open to students majoring in food, agricultural, and biological engineering or civil engineering.

### 591 Workshop

In-depth study of selected area of agricultural mechanization with emphasis on application of principles, objectives, methods, and equipment to organization, management, and teaching of agricultural mechanics.

Su, Au, Wi, Sp Qtrs. Prereq: Teaching or extension experience or permission of instructor.

### 591.01 General U G 1-5

Repeatable to a maximum of 10 or hrs.

### 600 Agricultural Safety and Health U G 3

Contemporary issues in agricultural safety and health; strategies and methods for the management of safety and health programs.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: Limited to jr and sr students with prereqs of second writing course, and an oral expression course; or permission of instructor. GEC third writing course, 600 and 605 together fulfill requirement.

### 605 Professional Development U 2

Developing and pursuing career plans; strategies and programs for employment, professional development, personal growth, and relationships.

Au Qtr. 1 2-hr cl. Prereq: Limited to jr and sr standing in AGR with prereqs of a second writing course and an oral expression course; or permission of instructor. GEC third writing course, 600 and 605 together fulfill requirement.

### H683 Honors Project U 1-10

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr Int 590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs. Repeatable as H683 or in combination with 293, 593, H593, H599, 693, or H694. This course is graded S/U.

### 693 Individual Studies U G 1-5

Problems not included in regular courses; practice in development, organization, solution, and reporting on such problems.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 694 Group Studies U G 1-5

Advanced studies in construction or agricultural systems management.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

## Agricultural Communication

204 Agricultural Administration Building, 2120 Fyffe Road, 292-0450

### 200 Introduction to Agricultural Communication U 3

History and development of mass communication and its application in agriculture. Examination of career opportunities and skills needed to enter the profession.

Au Qtr. 2 1.5-hr cl. Open only to majors in agr comm or written permission of instructor. Limited to freshmen, sophomores, and transfer students. Prereq for J Com 201 for agr comm majors only. Not open to students with credit for 190.

### 300 Publication Design and Production U 3

Application of layout and design principles to produce print and/or electronic documents for various audiences.

Wi Qtr. 2 1.5-hr cl.

### 367 Agricultural Issues in Contemporary American Society U 5

Development of skills in reading, writing, speaking, listening, critical thinking, and appreciation of diversity in agriculture and the United States society.

Au, Wi, Sp Qtrs. 1 2-hr lec, 2 1.5-hr rec. Prereq: English 110 or 111 or equiv, soph standing; or permission of instructor. GEC second writing and social diversity course.

### 390 Oral Expression in Agriculture U 4

Oral expression theory and practice in an agricultural environment.

Au, Wi, Sp Qtrs. 3 1-hr cl, 1 2-hr lab. Prereq: Second writing course.

### 400 Agricultural Feature Writing U 4

Principles and practice in feature writing. Laboratory experience in writing, editing, design, photography, and advertising.

Sp Qtr. 2 2-hr cl. Prereq: J Com 202 or permission of instructor. Repeatable to a maximum of 8 cr hrs. GEC course.

### 489 Agricultural Communication Internship U 2-5

Coordinated and supervised experience in agricultural communication including reporting, writing, editing, photography, graphics, broadcasting, advertising, and public relations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Limited to majors in ag comm. Repeatable to a maximum of 9 cr hrs. A final written report and an evaluation from the supervisor must be submitted to the instructor. This course is graded S/U.

### 510 Campaign Design and Management in Agricultural Organizations U 3

Case studies, plans, and practices in public relations campaigns.

Wi Qtr. 2 1.5-hr cl. Prereq: JComm 431.

### 590 Senior Seminar in Agricultural Communication U 5

Capstone course addressing communication issues of the contemporary world as related to agricultural and natural resource industries.

Sp Qtr. 3 1.5-hr cl. Prereq: Sr standing in agr comm or permission of instructor, and second writing course. GEC course.

### 593 Individual Studies U 1-5

Students plan, conduct, and report on a special problem in agricultural communication not included in regular course work.

Au, Wi, Sp Qtrs. Arr. Prereq: 2.50 cum pt-hr ratio and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### H683 Honors Project U 1-10

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs. Repeatable as H683 or in combination with 293, 593, H593, H599, 693, or H694. This course is graded S/U.

## Agricultural Education

208 Agricultural Administration Building, 2120 Fyffe Road, 292-6321

### 280 Introduction to Agricultural Education U 5

A framework for the cultural, psychological, and sociological understanding of human behavior and development relevant to agriculture education, including supervised field experience in public schools, extension, and agribusiness.

Au Qtr. 22-hr cl, 12-hr lab arr. Prereq: Psych 100 and Rurl Soc 105 or Sociol 101.

### 294 Group Studies U 1-5

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 342 Fundamentals of Leadership U 3

Designed to develop an understanding of leadership with particular emphasis on theory and practice relative to effective functioning as leaders.

Sp Qtr. 2 1.5-hr cl.

### 387^ Data Analysis in Applied Sciences U 5

Application and interpretation of descriptive and inferential statistics in applied sciences associated with agriculture.

Au, Wi, Sp Qtrs. 2 2-hr cl, 1 2-hr lab. Prereq: Math 116, 130, or 148; and basic knowledge of microcomputer use. Not open to students with credit for Agr Econ 205; Agronomy 210; Animl Sc 210; or Stat 125, 135, or 145. GEC course.

### 420 Program Development in Extension U 3

Understanding the history, philosophy, and development of extension programs in agriculture, home economics, 4-H/Youth development, community development and international settings.

Wi Qtr. 1 2.5-hr cl. Prereq: 280.

### 489 Internship in Agricultural Occupations U 1-5

Participation in agricultural employment experiences.

Su, Au, Wi, Sp Qtrs. Open only to department majors. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 530 Teaching Agriculture U 5

Examining the teaching and learning process with emphasis on planning and delivering agricultural instruction for agribusiness, extension, and the public schools.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 280.

### 560 Field Experience in Extension

Supervised participation in professional activities of extension personnel including clinical analysis in seminars.

Au, Wi Qtrs. 8 hrs/day for 10 wks. Prereq: 530, minimum CPHR 2.50. Application required at least two quarters prior to enrollment.

#### 560.01 Field Experience in Extension I U 5

Supervised participation in professional activities of extension personnel. Concur: 560.02, 560.03

#### 560.02 Field Experience in Extension II U 5

Clinical analysis of professional extension activities in conferences and seminars.

Concur: 560.01, 560.03

#### 560.03 Field Experience in Extension III U 5

Written assignments, lesson plans, and documentation of professional extension activities.

Concur: 560.01, 560.02

### 570 Field Experience in Agricultural Industry

Experience in educational programming in an agriculture-related business or industry.

Su, Au, Wi, Sp Qtrs. 8 hrs/day for 10 wks. Prereq: 530, minimum CPHR 2.50. Application required at least two quarters prior to enrollment.

#### 570.01 Field Experience in Agricultural Industry I U 5

Supervised experience in educational programming in an agriculture-related business or industry.

Concur: 570.02, 570.03.

#### 570.02 Field Experience in Agricultural Industry II U 5

Clinical analysis of educational programming experience in an agriculture-related business or industry in conferences or seminars.

Concur: 570.01, 570.03.

#### 570.03 Field Experience in Agricultural Industry III U 5

Written assignments, lesson plans, and documentation of educational programming experiences in an agriculture-related business or industry.

Concur: 570.01, 570.02.

### 575 Teaching Vocational Agriculture

Development of basic cognitive and performance skills required to earn a one-year certificate to teach vocational agriculture.

Su Qtr. Prereq: Eligibility to apply for a vocational agriculture teaching certificate. Repeatable to a maximum of 12 cr hrs; decimal subdivisions not repeatable. Cross-listed with Educational Studies and Home Economics Education.

#### 575.05^ Follow-Up Program U 4

Orientation to vocational agriculture with emphasis upon purposes and content of such programs in teaching high school and adult students.

8 hrs per day, 10 days. Prereq: 575.01. This course is graded S/U.

### 580 Field Experience in Public Schools

Supervised participation in teaching and other professional responsibilities of teachers of agriculture including clinical analysis in conferences and seminars.

Au, Wi Qtrs. 8 hrs/day for 10 wks. Prereq: 530, minimum CPHR 2.50. Application required at least two quarters prior to enrollment.

#### 580.01 Field Experience in Public Schools I U 5

Supervised participation in teaching and other professional responsibilities of teachers in agriculture in public schools.

Concur: 580.02, 580.03.

#### 580.02 Field Experience in Public Schools II U 5

Clinical analysis of teaching agriculture in the public schools in conferences and seminars.

Concur: 580.01, 580.03.

#### 580.03 Field Experience in Public Schools III U 5

Written assignments, lesson plans, and documentation of teaching agriculture in the public schools.

Concur: 580.01, 580.02.

### 585 Program Development in Public Schools U 3

Principles and procedures used in planning and conducting programs of agricultural education.

Sp Qtr. 1 2.5-hr cl. Concur: 530.

### 594 Group Studies U 3

Group studies for students in specialized programs.

Su Qtr. Arr. Repeatable to a maximum of 15 cr hrs.

### 600 Contemporary World Issues in Agricultural Education U 5

Debate, consideration, and integration of agricultural education from a wider agricultural perspective; including international awareness, problem solving, and ethical decision-making.

Sp Qtr. 5 cl. Prereq: 560 or 570 or 580 or Agr Econ 401 and 402; and second writing course. GEC course.

### 621 Curriculum Development U G 3

Principles and practices used in developing courses of study in agriculture for high school and post-high school programs.

Su Qtr. 1 2.5-hr cl.

### 622 Continuing Education in Agriculture U G 3

Principles and practices involved in developing vocational, technical, and extension programs for out-of-school youth and adults.

Wi Qtr. 1 2.5-hr cl.

### 631 Methods in Teaching Agriculture U G 3

Theory, principles, and procedures associated with effective instruction in agriculture at the secondary, technical, and college levels.

Su Term 1 1 2.5-hr cl.

### 640 Instructional Media in Teaching Agriculture U G 3

Theory and practice in developing and using instructional media and equipment at the secondary, technical, and college levels.

Au Qtr. 1 2.5-hr cl.

### 641 Occupational Experience in Agricultural Education U G 3

Principles and procedures used in selecting, planning, conducting, and evaluating occupational experience programs for students.

Su Qtr. 1 2.5-hr cl.

### 642^ Youth Organizations U G 3

An analysis of youth organizations in vocational and extension education with emphasis on planning and conducting such programs.

Wi Qtr. 1 2.5-hr cl.

### 643^ Youth Program Management in Non-School Settings U G 3

Principles, theories, and practices involved in conducting, supervising, and managing a youth program.

Sp Qtr. 3 cl.

**H683 Honors Projects U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs. Repeatable as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**684 Internship in Agricultural Education**

Guided participation to further enhance professional and/or technical competency in selected areas.

Su, Au, Wi, Sp Qtrs.

**684.10 Internship in Agricultural Education: Teaching Agriculture in Public Schools U G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**684.20 Cooperative Extension Education U G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**684.30 Technical U G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**684.40 Specialized Agriculture U G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693 Individual Studies U G 1-5**

Planning, conducting, and reporting a special study appropriate to the needs of the student.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**770 Evaluation U G 3**

Evaluation principles and procedures used in developing vocational, technical, and extension programs.

Wi Qtr. 1 2.5-hr cl.

**789 Survey Research Practicum G 5**

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

Sp Qtr. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in AED Econ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, Rurl Soc, Sociol, or Stat. Cross-listed in AED Econ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, Rurl Soc, Sociol, and Stat.

**790 Workshop in Agricultural Education U G 1-5**

Intensive study of selected areas of agricultural education with emphasis on the application of principles and methods in attaining desired objectives.

Su, Au, Wi, Sp Qtrs. Minimum of 3 wks. Prereq: Teaching or extension experience. Repeatable to a maximum of 24 cr hrs.

**795 Seminar**

1- or 2-hr cl. Prereq: Written permission of instructor. A maximum of 15 cr hrs may be earned with not more than 6 hours in any one decimal subdivision.

**795.01 Contemporary Problems U G 1-3**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**795.02 Problems and Issues U G 1-3**

Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs.

**795.03 Leadership Development U G 1-3**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs.

**795.04 Program Development U G 1-3**

Au Qtr. Repeatable to a maximum of 6 cr hrs.

**795.05 Research and Evaluation U G 1-3**

Au Qtr. 2 hr cl. This course is graded S/U.

**795.06 Communication U G 1-3**

Au, Sp Qtrs. Repeatable to a maximum of 6 cr hrs.

**800 History and Philosophy of Agricultural Education G 3**

Historical and philosophical underpinnings of agricultural education in its broadest context.

Au Qtr. 1 2.5-hr cl.

**810 Principles of Vocational-Technical Education G 3**

An analysis of evolving concepts of vocational and technical education with emphasis upon principles underlying organizations and practice.

Wi Qtr. 1 3-hr cl.

**811 Administration and Supervision G 3**

Theories, concepts and principles for leadership, administration and management in communication, education, extension and community settings.

Sp Qtr. 1 2.5-hr cl.

**812<sup>+</sup> Teacher Education G 3**

Principles and methods of teacher education in agriculture including selection and guidance of students, curriculum, field experience, placement, in-service education, and research.

Au Qtr. 1 2.5-hr cl.

**821<sup>+</sup> Administrative Practices in Vocational Education G 3**

A study of the concepts of vocational education program administration, including management skills, policy development, staff management, finance, and program evaluation.

Sp Qtr. 1 2.5-hr cl. Not open to students with credit for 811 or Ed-Votec 821. Cross-listed in Edu PAES 828.

**823 Program Planning G 3**

Planning, implementation, and management of instructional systems in education and training programs.

Au Qtr. 1 2.5-hr cl.

**830<sup>+</sup> Supervision of Instruction in Vocational Education G 3**

A study of the concepts of vocational education supervision including leadership styles, improving instruction, and program and personal evaluation.

Su Qtr. 1 2.5-hr cl. Not open to students with credit for Ed-Votec 830. Cross-listed in Edu PAES.

**831 Teaching and Learning in Agricultural Education G 3**

Cognitive, psychological and teaching methods relevant to agricultural education including human development and problem solving.

Wi Qtr. 1 2.5-hr cl.

**840 Agricultural Communication Theory and Practice G 3**

Communication theories and methods applied to the food, agricultural and environmental sciences, including social scientific foundations of communication research.

Au Qtr. 2 1.5-hr cl.

**843<sup>+</sup> Program Development in Extension G 3**

Principles, theory, and practice in developing state and local programs of Extension Education.

Wi Qtr. 1 2.5-hr cl. Prereq: 823 or permission of instructor.

**885 Research Methods G 3**

Principles and techniques of research appropriate for planning, conducting, and reporting research in vocational, technical, and extension education.

Su Term 1, Au, Wi, Sp Qtrs. Su (1st term), 5 cl; Au, Wi, Sp Qtrs, 1 3-hr cl.

**886 Research Design G 3**

Development of effective design for research problems in vocational, technical, and extension education, including theory, models, and sampling.

Su Term 1, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 885 or equiv.

**887 Analysis and Interpretation of Data G 3**

Application and interpretation of descriptive and inferential statistics for research in vocational-technical and extension education, including the use of the computer.

Au, Sp Qtrs. 1 2.5-hr cl. Prereq: 886 or equiv.

**888 Instrumentation and Procedures for Data Collection G 3**

Selection, development, and analysis of various types of instruments and procedures for collecting research data.

Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 885 or equiv.

**889 Advanced Studies G 3**

Individual field study in partial fulfillment of needs for research experience.

Su, Au, Wi, Sp Qtrs. Prereq: 885. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**993 Individual Studies G 1-5**

Planning, conducting, and reporting a special study appropriate to the needs of the individual student.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**995 Seminar in Research G 1-3**

Further development and direction of individual studies and programs of research.

Au, Sp Qtrs. 1 2.5-hr cl. Prereq: 886. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**999 Research G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Agricultural, Environmental, and Development Economics

103 Agricultural Administration Building, 2120 Fyffe Road, 292-7911

### 200 Principles of Food and Resource Economics U 5

Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Math 130 or equiv. Not open to students with credit for H200, or Econ 200. This course available for EM credit. BER/GEC/LAR course. SS Admis Cond course.

### H200 Principles of Food and Resource Economics U 5

Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use.

Au Qtr. 5 cl. Prereq: Math 130 or permission of instructor. Not open to students with credit for 200 or Econ 200 or H200. BER/GEC/LAR course. SS Admis Cond course.

### 205 Data Analysis for Agribusiness and Applied Economics U 5

Introductory course in data analysis, stressing computer applications of probability and statistics, problems of data gathering, presentation, and interpretation in economics and business.

Au, Wi, Sp Qtrs. 3 1-hr cl, 1 96-min lab. Prereq: Math 130. Not open to students with credit for Agr Educ 387, H&CS 260, Anim Sci 260, Stat 133 or 145. GEC course.

### 247 Career Assessment and Opportunities in Agribusiness and Applied Economics U 1

Identification of personal strengths and professional goals; exploration of career opportunities in agribusiness and applied economics; discussion of skills and courses necessary for specific career paths.

Wi Qtr. 1 1.5-hr cl. Prereq: Soph standing. Not open to seniors or non-majors.

### 401 Principles of Agribusiness Management U 4

Introduction to agribusiness management principles and skills in the context of the four functions of management: planning, organizing, directing, and controlling.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Basic spreadsheet competency and 200 or H200 or Econ 200 or H200.

### 402 Principles of Agribusiness Marketing U 4

Study of specific problems of marketing food and fiber products with emphasis on structures and institutions facing agribusinesses in domestic and international markets.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 200, H200, Econ 200, or H200.

### 403 Principles of Agribusiness Finance U 4

Financial management of farms and agribusinesses; financial system, time value of money, security valuation, capital budgeting, capital structure, portfolio analysis, financial institutions.

Wi, Sp Qtrs. 2.2-hr cl. Prereq: 200 or H200 or Econ 200 or H200 and Acct&MIS 211 and AED Econ 205 or equiv.

### 412 Farm Records and Analysis U 5

Nature and need for farm business records, analysis and interpretation of essential records from farm manager viewpoint; their use in income tax reporting and management.

Wi, Sp Qtrs. 2 2-hr cl, 1 2-hr lab. Prereq: 401 or concurrent and Acct & MIS 211 or equiv.

### 426 Dairy Marketing and Pricing U 3

Principles and practices involved in marketing and pricing milk and dairy products. Principles of dairy futures and options; U.S. agricultural dairy policy.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 200.

### 489 Internship in Agribusiness and Applied Economics U 3

Supervised experience with an approved firm or organization; pre-approved outline, oral presentation, and written comprehensive report required.

Su, Au, Wi, Sp Qtrs. Prereq: 401 or 402 or 403 or 500 or Econ 501 and permission of instructor. Open only to dept majors. This course is graded S/U.

### 500 Managerial Economics for Agribusiness U G 4

Application of economic theory and methods to agribusiness decision making.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 200 (H200) or Agr Econ 200 (H200) or Econ 200 (H200); Econ 201 (H201) or Econ 400 (H400); and AED Econ 205 or Agr Econ 205 or equiv.

### 501 Price Analysis U 3

Forces that influence the behavior of agricultural prices; analytical techniques useful in predicting price changes or the consequences of price changes are introduced.

Au, Wi Qtrs. 2 1-hr cl, 1 2-hr lab. Prereq: Basic spreadsheet competency and 500 or Econ 501, Math 132, and one of the following: 205 or Stat 133 or 145, Agr Educ 387, H&CS 260, Anim Sci 260.

### 502 Production Decision Analysis U 3

Evaluation of production and financial decision through experiments with economic models, with emphasis on computerized solutions using linear programming and simulation techniques.

Wi, Sp Qtrs. 3 1-hr cl, 1-hr lab. Prereq: Basic spreadsheet competency, 401, 403, 500 or Econ 501, and one of the following: 205, Agr Educ 387, H&CS 260, Anim Sci 260 or Stat 145.

### 503 Economics of Public Policy Analysis U 3

Understanding of economic tools and concepts for analyzing public policies important to the food industry, agriculture and natural resources.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 500 or Econ 501.

### 510 Farm Business Management U 3

Analysis of resource control and business organization decisions that are unique to farm firms.

Wi Qtr. 3 cl. Prereq: 401.

### 521 Salesmanship in Agriculture U 3

Principles and techniques of selling to agribusiness buyers.

Au Qtr. 3 cl, 1-hr lab/discussion. Prereq: 402.

### 522 Economics of the Livestock-Meat Industry U G 3

Principles and practices involved in marketing livestock and meat; institutions and agencies concerned in pricing and product flows; industry organization and performance, public regulation; future trends.

Wi Qtr. 3 cl. Prereq: 402. Offered in cooperation with Animal Science.

### 523 Grain Marketing U G 3

Principles and practices involved in grain and feed marketing and the theory of grain pricing; economics of grain marketing.

Au Qtr. 3 cl.

### 528 Marketing Fruits and Vegetables U G 3

Principles involved in the marketing of fresh and processed fruits and vegetables and the institutions and agencies concerned in pricing and product flows from producer to consumer.

Sp Qtr. 3 cl, 1 2-day field trip.

### 531 Environmental and Natural Resources Economics U G 5

Economic analysis of the use and management of natural resources and of environmental policy.

Au, Sp Qtrs. 5 cl. Not open to students with credit for Nat Res 531. Cross-listed in Natural Resources.

### 534 Food and Fiber Economics U G 3

Economic factors affecting domestic and international specialization in food and fiber production and consumption and consequent interregional trade patterns.

Sp Qtr. 3 cl.

### 535 Economic Development Processes in Developing Countries U G 5

Study of major Third World problems using principles of development economics. Examines poverty, inequality, unemployment, population growth, resource use and rural development.

Wi Qtr. 2 2-hr cl. Prereq: 200 or Econ 200. Not open to students with credit for Econ 650 or Int Stds 535. Cross-listed in International Studies.

### 536 Economic Development of Sub-Saharan Africa U G 5

Issues shaping economic development and stagnation in contemporary Africa such as population growth, agricultural development, industrialization, trade, structural adjustment and environmental issues.

Sp Qtr. 2 2-hr cl. Prereq: 200 or Econ 200. Not open to students with credit for Int Stds 536. Cross-listed in International Studies.

### 537 Middle Eastern Economic Development U G 5

Economic conditions, problems, integrations and potentials of Middle Eastern economies using principles of economic development and growth models. Examines their interrelationships with U.S. and world economy.

Sp Qtr. 2 2-hr cl. Prereq: 200 or Econ 200.

### 538 Latin American Economic Development U G 5

Public policy and other factors influencing economic growth in Latin America are examined.

Sp Qtr. 2 2.5-hr cl. Prereq: 200 or Econ 200 or equiv. Not open to students with credit for Int Stds 538. Cross-listed in International Studies.

### 541 Agricultural Cooperatives U G 3

Basic principles of cooperatives including types of organizations, legal aspects, governance, membership relations, debt and equity financing, organizational and inter-cooperative problems, and distribution of earnings.

Sp Qtr. 2 1.5-hr cl. Prereq: 401 or equiv.



**553 Consumer and Food Economics U G 4**

Applications of economic and statistical tools to analyze consumption behavior, demand for food and nutrition, food safety, market structure, and fast food industry.

Sp Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 200 or Econ 200 and knowledge of elementary statistics and basic spreadsheet competency or permission of instructor.

**560 Human Resource Management in Small Businesses U G 3**

Human resource planning, job analysis, organizational structure, recruitment and selection, training, motivation, leadership, communication, compensation, and evaluating employee performance in context of small businesses.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 401 or Bus-MHR 500.

**591 Workshop**

Study of selected topics in agricultural, environmental, and development economics for teachers of vocational agriculture and extension agents.

Su Qtr. 4 2-hr cl. At least 5 cr hrs of previous course work in agricultural, environmental, and development economics or the equiv. Repeatable to a maximum of 12 cr hrs; decimal subdivisions not repeatable.

**591.01 Agricultural Business Management U G 3****591.02 Agricultural Marketing U G 3****591.03 Financial Management in Agriculture U G 3****595 Seminar in Agricultural Economics U 1**

Analysis of social and economic problems encountered by college graduates in a dynamic world.

Wi Qtr. 1 2-hr cl. Prereq: Sr standing.

**597 Issues of the Contemporary World**

Prereq: Sr standing. GEC/LAR course.

**597.01 Problems and Policies in World Population, Food, and Environment U 5**

Problems related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these problems, especially in low-income countries.

Su, Au, Wi, Sp Qtrs. H597.01 offered Sp Qtr only. 2 1.5-hr cl, 1 2-hr rec. H597.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Int Stds 597.01. Cross-listed in International Studies.

**601 Strategic Management U 5**

A case-based course analyzing applied strategic management problems confronting agribusiness firms. Cases examine the economic complexities comprising the global food system.

Au, Sp Qtrs. 2 2-hr cl. Prereq: 401, 402, 403, 501, 502, 503 and a second writing course. 503 may be taken concurrent. GEC course.

**610 Strategic Planning for the Farm Business U G 3**

Detailed application of production economics, management principles, and decision making techniques to the organization, operation, and administration of farms; farm plans developed.

Sp Qtr. 3 cl and field trips during quarter. Prereq: 401, Acct&MIS 201 or 211.

**620 Agri-Industry Organization and Public Policy U G 4**

Structure, conduct, performance, and public policy in agricultural industries; extensive use of analytical evidence focused on co-ops, and food manufacturing, wholesaling, and retailing.

Sp Qtr. 2 2-hr cl. Prereq: 402 and 20 additional cr hrs in the social sciences.

**625 Commodity Futures and Options Markets U G 3**

Explores the institutional structure, price formation, and hedging uses of commodity futures and options markets.

Wi Qtr. 3 cl. Prereq: Sr standing or above.

**631 Benefit-Cost Analysis U G 5**

Development and illustration of key benefit-cost concepts and estimation techniques through applications to agricultural, infrastructure, natural resource, and environment projects.

Au Qtr. 2 2-hr cl, 1 1-hr cl. Prereq: 531 or minimum of 10 hrs of economic principles or permission of instructor.

**632 Agricultural Development: Theory and Empirical Evidence U G 4**

Analysis of the agricultural and economic development process of developing countries; evaluation of theory and empirical evidence regarding the development process.

Wi Qtr. 2 2-hr cl. Prereq: 401, 402, or 403; or grad standing or permission of instructor. Not open to students with credit for 532.

**670 Agricultural Law U G 3**

Legal concerns of owning and/or managing farm and agri-business firms as related to property ownership, finance, business organization, labor, insurance, family, and estate planning.

Sp Qtr. 3 cl.

**680 The Economics of Growth and Sprawl in America's Countryside U G 4**

Changes in land use and population at the rural-urban fringe. Focus on economic factors driving changes, implications for rural and exurban communities, role of government.

Au Qtr. 2 2-hr cl. Prereq: Econ 501 or AED Econ 500 or permission of instructor.

**H683 Honors Project U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr 590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs. Repeatable as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**693 Individual Studies**

Planning, conducting, and reporting a special problem in agricultural economics.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio, 401 or 402 or 403, or Econ 501 and written permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions.

**693.01 Agribusiness Management and Finance U G 1-3**

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693.02 Agricultural Marketing and Policy U G 1-3**

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693.03 Foreign Agricultural Development U G 1-3**

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693.04 Quantitative Methods in Agricultural Economics U G 1-3**

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693.05 Resource Economics U G 1-3**

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693.06 General Agricultural Economics U G 1-3**

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693.07 Consumption and Demand U G 1-3**

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693.08 Regional Economics U G 1-3**

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**694 Group Studies**

Selected topics in agricultural economics to acquaint students with current economic conditions.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**694.01 Agricultural Management and Finance U G 2-5**

Repeatable to a maximum of 10 cr hrs.

**694.02 Agricultural Marketing and Policy U G 2-5**

Repeatable to a maximum of 10 cr hrs.

**694.03 Foreign Agricultural Development U G 2-5**

Repeatable to a maximum of 10 cr hrs.

**694.04 Quantitative Methods in Agricultural Economics U G 2-5**

Repeatable to a maximum of 10 cr hrs.

**694.05 Resource Economics U G 2-5**

Repeatable to a maximum of 10 cr hrs.

**694.06 General Agricultural Economics U G 2-5**

Repeatable to a maximum of 10 cr hrs.

**694.07 Consumption and Demand U G 2-5**

Repeatable to a maximum of 10 cr hrs.

**694.08 Regional Economics U G 2-5**

Repeatable to a maximum of 10 cr hrs.

**695 Farm and Agribusiness Management Seminar U G 2**

Topics in farm and agribusiness management selected to reflect emerging problem areas and opportunities for application of analytical tools developed in previous courses.

Wi Qtr. 1 2-hr cl. Prereq: 610 or 640 or 670 or permission of instructor. Repeatable to a maximum of 4 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701 Applied Data Analysis for Agricultural, Environmental, and Development Economics G 4**

Practical application of statistical and time series methods to the analysis of economic data in agricultural, environmental, and development economics.

Wi Qtr. 2 2-hr cl. Prereq: 500 or Econ 501 and Stat 133 or Agr Econ 205. Not open to students with credit for Agr Econ 622 or AED Econ 622.

**702 Introduction to Computational Economics U G 4**

Practical application of linear and nonlinear programming methods to management problems in agricultural, environmental, consumer, and financial economics.

Au Qtr. 2 1.5-hr cl, 1 1.5-hr lab. Prereq: Math 132, AED Econ 500 or Econ 501.

**703 Economics of Consumption U G 4**

Applications of economic theory to consumption analysis, new models of consumer choices, empirical studies of demand/consumption, and consumer issues in the market place.

Sp Qtr. 2 2-hr cl. Prereq: Econ 501 or equiv.

**711 Production and Consumption in Agricultural, Environmental, and Development Economics G 4**

Microeconomic theory principles and their application to the production, consumption, and market exchange of agricultural and environmental goods and services.

Au Qtr. 2 2-hr cl. Prereq: 500 or Econ 501. Required for MS in Agricultural, Environmental, and Development Economics.

**712 Finance and Risk Management for Agricultural, Environmental, and Development Economics G 4**

Managerial finance and risk management principles and their application to production, consumption, and investment problems in agricultural, environmental, and development economics.

Wi Qtr. 2 2-hr cl. Prereq: 711. Required for MS in Agricultural, Environmental, and Development Economics.

**713 Public Policy and Market Regulation in Agricultural, Environmental, and Development Economics G 4**

Theories of social welfare, market failure, and public goods and their application to policy and regulation issues in agricultural, environmental, and development economics.

Sp Qtr. 2 2-hr cl. Prereq: 711. Required for MS in Agricultural, Environmental, and Development Economics.

**716 Advanced Agricultural Finance U G 4**

Examination of theoretical and empirical models of agricultural finance with emphasis on firm financial decision analysis, supply of and demand for rural financial services.

Wi Qtr. 2 2-hr cl. Prereq: 403 or Bus-Fin 620.

**734 Agricultural Trade Policy U G 4**

International trade theory and its application to trade and policy issues in the food and agricultural sector.

Au Qtr. 2 2-hr cl. Prereq: Econ 501 and 502 or equiv.

**789 Survey Research Practicum G 5**

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

Sp Qtr. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in Agr Educ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, Rurl Soc, Sociol, or Stat. Cross-listed in Agr Educ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, Rurl Soc, Sociol, and Stat.

**800 Research Methods in Agricultural, Environmental, and Development Economics G 3**

Principles of scientific methods in agricultural, environmental, and development economics.

Sp Qtr. 2 1.5-hr cl. Prereq: 711 or 712 or Econ 804.

**801 Applied Methods in Agricultural Economics Modeling G 4**

Principles and practice of applied econometrics to models in agriculture. Nonlinear and MLE estimation and hypothesis testing applied to systems of equations and censored models.

Au Qtr. 2 2-hr cl. Prereq: Econ 741.

**802 Advanced Computational Economics G 4**

Numerical analysis of stochastic dynamic models in economics and finance, emphasizing formulation, solution, and simulation of dynamic optimization, rational expectations, and arbitrage pricing models.

Au Qtr. 2 1.5-hr cl, 1 1.5-hr lab. Prereq: 702, 800, and Econ 741.

**803 Applied Demand Analysis G 4**

Application of demand and consumption theory to the estimation of demand relationships and demand systems in agricultural and natural resource markets.

Wi Qtr. 2 2-hr cl. Prereq: 801 and Econ 804.

**806 Economics of Agricultural Production G 4**

A further consideration of economic principles as they apply to production problems in agriculture.

Wi Qtr. 2 2-hr cl. Prereq: 711 and Econ 808.

**807 Economic Analysis for Collective Choice G 5**

Develops and extends benefit cost, public choice and new institutional economics for consideration of efficiency, basic needs, income distribution and sustainability in collective choice issues.

Su Qtr. 2 2.5-hr cl. Prereq: 631 or 711 or Econ 501A and a course in regression analysis.

**809 Applied Welfare Economics and Policy Analysis G 4**

Welfare economic theory and its application to public policy issues in agriculture and natural resources.

Sp Qtr. 2 2-hr cl. Prereq: 803, 806, and Econ 808.

**810 Agricultural Firm Management G 3**

Examination of the operating and strategy problems confronting the managers of farm and nonfarm agribusiness firms, with emphasis on applying and integrating management concepts.

Au Qtr. 2 1.5-hr cl. Prereq: Econ 501 or 501A or permission of instructor.

**816\* Financial Markets and Rural Development G 4**

Course provides conceptual framework for formulation and evaluation of financial policies in developing countries (for rural and microenterprise activities). Emphasizes role of the state in finance.

Wi Qtr. 2 2-hr cl. Prereq: Econ 705 or permission of instructor.

**820 Marketing Economics in Agriculture G 3**

A critical study of contemporary problems in agricultural marketing in the U.S. and world economics with emphasis on the theoretical and policy implications.

Au Qtr. 3 1. Prereq: 703 or Econ 501A or permission of instructor.

**830 Agricultural, Environmental, and Development Policy G 4**

Application of welfare economic theory and institutional economics to problems and policies in agricultural, environmental, and development economics.

Su Qtr. 4 cl. Prereq: Econ 501 and 502.

**831 Resource Economics G 3**

Application of economic theory and decision-making frameworks to current issues of resource use, allocation, and control.

Sp Qtr. 3 cl. Prereq: Econ 501A or permission of instructor.

**832\* Seminar in Economic Development of Foreign Agriculture G 3**

Characteristic problems of developing countries, identification and analysis of limiting factors in underdevelopment, and techniques for stimulating economic development through growth in agriculture.

Sp Qtr. Prereq: Econ 501 or 501A or permission of instructor. Repeatable to a maximum of 8 cr hrs.

**833\* Economic Development Theory and Policy G 4**

Applied development economics course with emphasis on policy formulation and evaluation; shows the power of economic theory for analysis of policies, markets and institutions.

Wi Qtr. 2 2-hr cl. Prereq: 734 or Econ 665 and Econ 501 or permission of instructor. Not open to students with credit for Econ 850.

**834\* Political Economy of Trade, Development and Agricultural Policies G 4**

Analysis of policy making process of trade, development, and agricultural support policies in the food sector and its impact on economic welfare. Examines rent-seeking behavior.

Sp Qtr. 2 2-hr cl. Prereq: 734 or Econ 665, and Econ 501; or permission of instructor.

**840\* Regional Economic Growth: Theory and Measurement G 4**

Theories of economic growth and development at the sub-national level. Problems of rural regions are highlighted.

Sp Qtr. 2 2-hr cl. Prereq: Geog 655 or permission of instructor.

**891 Field Survey in Agricultural, Environmental, and Development Economics G 1**

Seminar for PhD students to learn about the various fields in agricultural, environmental, and development economics.

Wi, Sp Qtrs. 1 1.5-hr cl. Prereq: Enrolled in PhD program in AED Economics. Required for PhD in AED Econ. This course is graded S/U.

**899 PhD Seminar**

Seminar forum for PhD students to present and discuss their PhD dissertation research.

Au, Wi, Sp Qtrs. 1 1.5-hr cl. Prereq: Satisfactory completion of the AED Economics Qualifier Exam. Permission of instructor. Required for PhD in AED Econ.

**899.01 Agricultural Economics G 1**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**899.02 Environmental Economics G 1**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**899.03 Development Economics G 1**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**899.04 Quantitative Methods G 1**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**899.05 Agribusiness G 1**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**899.06 Regional Economics G 1**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**902\* Computable General Equilibrium Analysis G 4**

Application of computable general equilibrium methods to analyze allocative and distributional effects of economic policies.

Sp Qtr. 2 2-hr cl. Prereq: 711 or Econ 804 and 805.

**934 Advanced International Trade in Food and Agriculture G 4**

Synthesis of trade theory with industrial organization analysis and applications to the food and agricultural sector.

Au Qtr. 2 2-hr cl. Prereq: Econ 808 or 861 or permission of instructor.

**993 Individual Studies**

Planning, conducting, and reporting a special problem in agricultural, environmental, and development economics fitting the needs of the student, under the guidance of an instructor.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs in any or a combination of decimal subdivisions.

**993.01 Agricultural Management and Finance G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**993.02 Agricultural Marketing and Policy G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**993.03 Foreign Agricultural Development G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**993.04 Quantitative Methods in Agricultural Economics G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**993.05 Resource Economics G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**993.06 General Agricultural Economics G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**993.07 Consumption and Demand G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**993.08 Regional Economics G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**995 Seminar G 2-4**

Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

**999 Research in Agricultural, Environmental, and Development Economics G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Agriculture: Interdisciplinary

100 Agricultural Administration Building, 2120 Fyffe Road, 292-6891

**100 Agriculture Survey U 1**

Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of agriculture academic areas of study and services.

Su, Au, Wi, Sp Qtrs. 2 cl. H100 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 101, Arts Col 100, Arts&Sci 100, Engineer 100, Home Ec 100, Nat Res 100, or UVC 100 or H100.

**294 Group Studies U 1-5**

Group study classes or projects in selected interdisciplinary topics in Agriculture.

Su, Au, Wi, Sp Qtrs. Arr.

**351 Agricultural Employment U 1**

Discussion of personal career objectives in agriculture and conducting an effective employment campaign through resumes, cover letters, interviewing, and job offer evaluation.

Au, Wi Qtrs. 1 cl.

**H590 Agriculture Honors Colloquium**

1 cl.

**H590.01 Research U 1**

Preparation of honors programs, design of honors research projects, and writing of research proposals.

Au Qtr. 1 cl. Prereq: Enrollment in AGR honors program and jr standing or permission of instructor.

**H590.02 Research Presentation U 1**

Preparation, delivery, and evaluation of oral research reports regarding various disciplines within the field of agriculture.

Wi, Sp Qtrs. 1 cl. Prereq: H590.01.

**595 Seminar U 2-5**

Current topics of general interest to undergraduate students in agriculture and natural resources.

Wi Qtr. Arr. H595 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Jr or sr standing in the college and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Study in interdisciplinary topics in agriculture.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

**797 Interdepartmental Seminar U G 1-2**

Two or more departments or colleges may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable. Repeatable by permission. This course is graded S/U.

## Air Force Aerospace Studies

353 Converse Hall, 2121 Tuttle Park Place, 292-5441

Qualified students interested in obtaining an officer's commission in the Air Force may enroll in Air Force ROTC classes through contracted agreement between The Ohio State University and the United States Air Force.

The first two years of enrollment (freshman/sophomore), is the General Military Course, which includes lessons on officership, communication, aerospace doctrine and history of military aviation. There is no obligation to serve in the military for non-scholarship cadets the first two years. The last two years (junior/senior), is the Professional Officer Course dealing with quality management training, communication skills, leadership, and national defense policy. Air Force ROTC cadets also attend a two-hour leadership laboratory period each week.

Air Force ROTC offers four-, three-, and two-year scholarships. Four-year scholarships are applied for during the senior year in high school. Three- and two-year scholarships are offered to qualified men and women in college, regardless of major. The benefits provided by scholarships include full payment of tuition, \$160 per quarter for textbooks, and a tax-free allowance of \$200 per month. Upon entering the Professional Officer Course (POC), all cadets (scholarship and non-scholarship) receive the \$200 per month tax-free allowance. Non-scholarship POC cadets also receive \$1000 for tuition and \$150 each quarter provided they obtain a 2.00 or higher quarter point-hour ratio.

More information on Air Force classes or scholarships can be obtained by calling the Department of Air Force Aerospace Studies at 614-292-5441.

General Military Course - Freshmen and Sophomores (100- and 200-level courses)

Professional Officer Course - Juniors, Seniors, and Graduate Students (300- and 400-level courses)

**101 Foundation of Officership and Air Force Customs and Courtesies U 1**

Introduction to the Air Force including officership, followership, military customs and courtesies, and communication skills.

Au Qtr. 1 cl, 2 lab hrs.

**102 Air Force Organization and Environment U 1**

Exploration of the organization and environment in the Air Force.

Wi Qtr. 1 cl, 2 lab hrs.

**103 Air Force Opportunities and Benefits, and Officer Traits U 1**

Opportunities and benefits in the Air Force; exploration of officer traits including communication skills.

Sp Qtr. 1 cl, 2 lab hrs.

**201 The Evolution of USAF Air and Space Power from Inception to World War II U 1**

Issues of leadership, technological advances, and air power theory.

Au Qtr. 1 cl, 2 lab hrs.

**202 The Evolution of USAF Air and Space Power from 1940 to 1970 U 1**

The role of US air power from 1947 through the initial Cold War years and the Vietnam War.

Wi Qtr. 1 cl, 2 lab hrs.

**203 The Evolution of USAF Air and Space Power from 1970 through 2025 U 1**

The role of US Air power during the post-Vietnam era through 2025 with emphasis on regional conflicts and growing technological sophistication.  
Sp Qtr. 1 cl, 2 lab hrs.

**301 Air Force Leadership and Management U 3**

Roles and responsibilities of Air Force officers; topics include leadership (principles, styles, and responsibilities), management, training philosophy, conflict management, problem solving, and oral communications.  
Au Qtr. 3 cl, 2 lab hrs.

**302 Leadership Concepts and Quality Air Force U 3**

Leadership concepts, including counseling, motivation, delegation, supervision, empowerment, mentoring, officership; quality Air Force philosophy; concepts, techniques, tools of quality management (improvement, process action teams, measurement tools).  
Wi Qtr. 3 cl, 2 lab hrs. Prereq: 301 or permission of instructor.

**303 Officer Development and Communication Techniques U 3**

Officer and enlisted evaluation systems, Air Force personnel system, ethics, advanced military topics, written communications; emphasis on supervision of enlisted personnel; feedback, assessment, enlisted evaluation reports.  
Sp Qtr. 3 cl, 2 lab hrs. Prereq: 302 or permission of instructor.

**401 National Security and the Strategy Making Process U 3**

The roles of the Executive branch, Congress, and military in the national security process; exploration of the organization and the role of the Air Force.  
Au Qtr. 3 cl, 2 lab hrs. Prereq: 303 or permission of instructor.

**402 Joint Military Operations and Area Studies U 3**

An investigation into the other military services and joint military operations; progresses into a study of US interests in regions around the world.  
Wi Qtr. 3 cl, 2 lab hrs. Prereq: 401 or permission of instructor.

**403 Preparation for Active Duty U 3**

Preparation for active duty as an Air Force officer.  
Sp Qtr. 3 cl, 2 lab hrs. Prereq: 402 or permission of instructor.

## Allied Medicine

School of Allied Medical Professions  
127 Atwell Hall, 1583 Perry Street, 292-1706

**200 CPR for the Health Care Provider U 2**

Knowledge, competencies, issues and concerns of health care providers regarding basic life support/cardiopulmonary resuscitation.

Wi Qtr. 1 cl, 1 1-hr lab. Prereq: Admission to the School of Allied Medical Professions or permission of instructor. Completion of course leads to American Heart Association certification Basic Life Support-Health Care Provider.

**419 Electronic Principles in Medical Instrumentation U 5**

The physical and electronic principles of medical instrumentation.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: Enrollment in Circulation Technology or permission of instructor.

**425 Critical Phases in Life I U 3**

An examination of human's development from conception to death and factors critical to continuing health.

Sp Qtr. 3 cl. Prereq: Biology 110 or equiv, and 5 hrs psych.

**430 Nutrition for Fitness U 4**

Introduction to the basic principles of nutrition as they relate to exercise performance and body composition of athletes and the physically active.

Sp Qtr. 2 2-hr cl. Prereq: General chemistry, biology, or physiology.

**500 Medical Terminology U 3**

Terminology pertaining to the treatment of disease, including standard abbreviations, anatomic, diagnostic, symptomatic, eponymic, laboratory, pathologic, radiology, anesthetic, operative, and drug terms.

Au, Wi, Sp Qtrs. 3 cl. Not open to students with credit for 500.01 or 500.02. Cross-listed in Health Information Management and Systems.

**505 Principles of Disease I U 3**

Basic pathophysiology and its application to the organ systems.

Au Qtr. 3 cl. Prereq: Admission to the School of Allied Medical Professions and Physiol 312 or Zoology 232; or permission of instructor.

**506 Principles of Disease II U 3**

A continuation of 505.

Wi Qtr. 3 cl. Prereq: 505.

**520 Musculoskeletal Disease U G 2-3**

Principles, clinical aspects, and therapeutic procedures related to diseases of the musculoskeletal system.

Sp Qtr. 2-3 cl. Prereq: Admission to the School of Allied Medical Professions or written permission of instructor.

**530 Neuromuscular Disease U G 3**

Survey of injury and disease of the central, peripheral, and autonomic nervous systems; presentation of clinical material.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**591 Health Care Organization U 3**

An examination of the roles of public and private organizations in planning and supporting health care, including study of health trends, social legislation, and current professional issues.

Wi Qtr. 3 cl. Prereq: Enrollment in AMP or NUR or permission of instructor.

**601 Death, Loss and Grief from Multiple Perspectives U G 3**

Exploration of death, loss and grief from multiple perspectives: patient, family, institutional, community and health care provider.

Au, Wi, Sp Qtrs. 1 1-hr cl, 1 2-hr cl. Prereq: Jr standing or above, or permission of instructor. Not open to students with credit for 565.

**610 The Hospital as an Educational Institution U G 3**

Hospital as a clinical learning environment for medical and allied medical professionals; in-service education; patient and community health education; continuing education.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**612 Managing the Health Care Training Function at the Departmental Level U G 3**

The techniques of in-service training programs; discussion and analysis of the role and function of the training manager.

Wi Qtr. 1 2-hr cl, 1 1.5-hr cl. Prereq: Sr or grad standing in allied med or health-related major, Jr or sr med comm major.

**627 Management of Patient Education Systems U G 3**

Planning, organizing, and evaluating patient education systems and programs in health care organizations.

Au Qtr. 1 2-hr cl, 1 hr arr. Prereq: Sr or grad standing in Allied Med or Health related major.

**630 Management Principles for Health Professionals U P G 3**

An analysis of the management process and its application to the health care setting.

Au, Sp Qtrs. 3 cl. Prereq: Enrollment in AMP or permission of instructor.

**640 Health Promotion and Disease Prevention in Acute Care Organizations U G 3**

Programs in acute care institutions are examined as a means of marketing services, reducing health care costs and changing the roles of allied health practitioners.

Sp Qtr. 2 1.5-hr cl. Prereq: Sr or grad standing in allied health or a related major.

**648 Microcomputer Applications in the Health Sciences U G 3**

Overview of microcomputer applications in health sciences with practical applications related to discipline specific needs.

Au, Wi, Sp Qtrs. 2 2-hr cl. Computer programming neither required nor taught. Cross-listed in Health Information Management and Systems.

**650 Health Care Information Systems U G 3**

Survey of patient, administrative and financial information systems in health care, and the technologies and management practices to support them.

Sp Qtr. 2 2-hr cl. Cross-listed in Health Information Management and Systems.

**654 Computer-Based Health Information Systems, Planning and Analysis U G 3**

Focus on structured systems analysis techniques including database design for health information systems.

Wi Qtr. 3 cl. Prereq: 648, 650 or permission of instructor. Cross-listed in Health Information Management and Systems.

**665 Understanding the Aging Process P G 3**

Study of physical and mental health components of normal aging with emphasis on critical components of successful aging, presented as basis for delivery of health services.

Sp Qtr. 2 1.5-hr cl.

**680 Research Design in Biomedical Sciences****680.01 Research Design in Biomedical Sciences U 3**

Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports.

Au, Wi Qtrs. 2 1.5-hr cl. H680.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for H680.01: Eligible for honors program in allied health.

**680.02 Research Design in Biomedical Sciences G 3**

Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports.

Wi Qtr. 1 2-hr cl, 1 hr arr. Prereq: Grad standing in allied health, pathology, or related field. The design of experiments and statistical concepts are further developed in Stat 528, 529, 530, 641, 645, 661, and Biostat 615.

**693 Individual Studies U G 1-5**

Guided study of selected topics.

Su, Au, Wi, Sp Qtrs. 1-5 cl. H693 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Supervised group studies of special topics within the various professions of the allied health field.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

3 cl. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology (Columbus seminaries). Repeatable to a maximum of 6 cr hrs.

**700.01 Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.

Wi Qtr. Repeatable to a maximum of 6 cr hrs.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumer/clients/patients.

Sp Qtr. Repeatable to a maximum of 6 cr hrs. (even numbered years only)

**700.03 Ethical Issues U G 3**

Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, mind control, malpractice, social responsibility of the professions.

Au Qtr. Repeatable to a maximum of 6 cr hrs.

**700.04 Interprofessional Seminar in Clinical Practice**

Interprofessional teamwork in clinical settings.

Wi Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Interprofessional exploration of the history, formation, and implementation of public policy issues of significance to seven helping professions.

Wi Qtr. Prereq: Sr standing or permission of instructor.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

Wi Qtr. Prereq: Permission of instructor. (even numbered years only) This course is graded S/U.

**700.07 Interprofessional Approaches to Child Abuse and Neglect U G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

Au Qtr. 1 2.5-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition and Food Management, Nursing, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families and Handicapped Children U G 3**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.

Wi Qtr. 1 3-hr cl. Not open to students with credit in 717.01 in any of the cross-listed areas. Limit of 20 students.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues U G 3**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Sp Qtr. 1 2-hr cl. Not open to students with credit in 717.02 in any of the cross-listed areas. Limit of 20 students.

**717.03 Developmental Disabilities U G 3**

Focus on the most pertinent scientific and societal issues of developmental disabilities.

Au Qtr. 1 3-hr cl. Not open to students with credit for 717.03 in any of the cross-listed areas.

**719 Early Intervention Interdisciplinary Team Dynamics G 3**

Interdisciplinary team-taught course with a focus on early intervention/early childhood education services for children birth to three and their families.

Au Qtr. 2.5-hr cl. Prereq: Permission of instructor. Not open to students with credit for Edu PAES 719, HDFS 719, Nursing 719, or Sph/Hrng 719. Cross-listed in Education: Physical Activity and Educational Services, Human Development and Family Science, Nursing, and Speech and Hearing Science.

**720 Aging and Design U G 3**

Analysis and development of designs for products and environment related to residential spaces for older adults based on environmental adjustment theories.

Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in Family Resource Management.

**730 Managerial Leadership in Allied Health G 3**

Application of managerial leadership principles for the development and administration of allied health departments in the health care system.

Au Qtr. 1 3-hr cl. Prereq: Admission to AMP grad program or permission of instructor.

**753 Teaching in the Allied Health Professions G 3**

Principles and practice of teaching in the allied health professions; focuses on various teaching roles and strategies of allied health professionals in academic and clinical settings.

Sp Qtr. 1 3-hr cl. Prereq: Admission to the AMP graduate program or permission of instructor. Cross-listed in Educational Policy and Leadership and Educational Services and Research.

**791 Case Studies in Clinical Gerontology P G 3**

Interdisciplinary course for graduate and professional students using a team approach and case studies to work with older adults.

Wi Qtr. 1 3-hr cl. Prereq: Dent 792.17 or permission of instructor.

**795 Seminar G 1-3**

Investigation of current topics of interest to allied health practitioners.

Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**802 New and Emerging Assistive Technologies for Individuals with Disabilities G 3**

Interdisciplinary course covering applications of technology to meet the functional needs of individuals in mobility, manipulation, communication, and cognition and learning.

Sp Qtr. Lec/lab. Not open to students with credit for Edu PAES 826. Cross-listed with Edu PAES 826.

**850 Issues in Allied Health G 3**

Discussion and critical examination of current issues in the allied health field and their impact on the health professions.

Wi Qtr. 1 3-hr cl.

**870 Fundamentals of Curriculum in Allied Health Education G 3**

Study of curriculum antecedents and issues in allied health: an orientation for health professionals which deals with the major curriculum forces which have, and are, shaping allied health education.

Au Qtr. 1 3-hr cl. Prereq: Admission to AMP graduate program or permission of instructor.

**889 Practicum**

Practical experience in the educational or administrative setting within the allied health fields.

Su, Au, Wi, Sp Qtrs. 1 1-hr cl, lab arr.

**889.01 Educational G 2-5**

Practical experience in an educational setting within the allied health fields.

Prereq: 3 cr hrs in educational methodology. Repeatable to a maximum of 10-cr hrs. This course is graded S/U.

**889.02 Administration G 2-5**

Practical experience in an administrative setting within the allied health fields.

Prereq: HMSA815 or equiv and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research G 1-9**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

## Anatomy and Medical Education

3184 Graves Hall, 333 West 10th Avenue, 292-4831

### 199 Basic Human Anatomy

The basics of human anatomy supplemented by computer-assisted instruction and demonstrations of human material.

4 1-hr cl, 1 2-hr lab. Not open to students with credit for 200. Not for students planning to take 201.

#### 199.01 Basic Human Anatomy U 5

Au, Wi, Sp Qtrs. Prereq: Health Sciences students in CED and ASC.

#### 199.03 Basic Human Anatomy U 5

Emphasis on clinical relationships.

Wi, Sp Qtrs. Prereq: Biology 113; enrollment pre-nursing.

#### 199.04 Basic Human Anatomy U 5

Emphasis directed toward speciality.

Au, Wi, Sp Qtrs. Prereq: Enrollment in pre-AMP, AMP, pre-Opt, ExSci, Pre-Pharm.

#### 199.05 Basic Human Anatomy U 5

Emphasis on head and neck anatomy.

Wi Qtr. Prereq: Enrollment in DHY only.

### 200 Introductory Anatomy U 6

Fundamental principles of human anatomy, supplemented by demonstrations of human material.

Sp Qtr. 4 cl, 2 2-hr labs. Prereq: Confirmed acceptance in programs in phys ther, occ ther, or rad tech. Not open to students with credit for 199.

### 201 Neuromuscular Anatomy U 5

Neuromuscular anatomy of the human body.

Au Qtr. 2 cl, 2 3-hr labs. Prereq: Enrollment in AMP or permission of instructor.

### 600 Advanced Neuromuscular Anatomy G 5

Neuromuscular anatomy of the human body through an in-depth dissection experience.

Su Qtr. 2 1-hr cl, 2 3-hr labs. Prereq: 200 or equiv, permission of instructor.

### 601 Human Anatomy for Dental Students P 7

Basic principles of embryology, anatomy, histology and neuroanatomy of the human body.

Au Qtr. 3 cl, 3 3-hr lab. Prereq: Dent 1st yr standing.

### 602 Human Anatomy for Dental Students P 4

A continuation of 601.

Wi Qtr. 5 cl, 2-hr lab. Prereq: 601.

### 603 Human Anatomy for Dental Students P 7

A continuation of 602.

Sp Qtr. 3 cl, 3 3-hr lab. Prereq: 602.

### 693 Individual Studies in Anatomy and Medical Education U P G 2-5,6,12,18

Designed to enable the student to pursue a minor investigation in some anatomical field of choice.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. 1 month, offered all months. This course is graded S/U.

### 700 Human Histology U G 6

A microscopic study of cells, tissues, and organs with particular emphasis on human; consideration of microscopic structure in relation to function of various organ systems.

Sp Qtr. 3 cl, 3 2-hr labs. Prereq: Permission of instructor.

### 710 Human Embryology G 3,5

Designed to acquaint the anatomy graduate student with a basic knowledge of human embryology.

Au Qtr. Arr. Prereq: Permission of instructor. Starts 3rd week in August.

### 712 Human Anatomy G 12

Designed to acquaint a graduate student with a basic knowledge of human anatomy by regional dissection.

Au Qtr. Arr. Prereq: Permission of instructor. Starts 3rd week in August; ends in mid-November.

### 716 Human Neurobiology G 7

Designed to acquaint a graduate student with a basic knowledge of human neuroanatomy.

Sp Qtr. Arr. Prereq: Permission of instructor. Not open to students with credit for Neuro Sc 716. Cross-listed in Neuroscience Department.

### 750 Radiologic Anatomy G 2

Anatomy of specific regions or areas as it applies to the interpretation and understanding of diagnostic images.

Sp Qtr. Arr. Prereq: Satisfactory completion of Med Coll 662, or Anatomy 712 or equiv and permission of instructor. Repeatable to a maximum of 8 cr hrs. Cross-listed with Radiology 750.

### 850 Seminar in Anatomy and Medical Education G 1

Discussions of research in progress and reports from the literature of current anatomical problems.

Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

### 911 Advanced Studies in Anatomy

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor.

#### 911.02 Connective Tissue and Bone G 3,5

Activities of fibrous connective tissues emphasizing formation and maintenance of fibers and ground substance; dynamics of the structure, chemistry, and metabolism of bone.

Repeatable to a maximum of 30 cr hrs.

#### 911.03 Embryology G 3,5

Mammalian embryological development emphasizing descriptive or experimental approach; metabolic aspects of development including enzymatic changes, hormonal effects, environmental factors, and teratogenic agents.

Repeatable to a maximum of 30 cr hrs.

#### 911.10 Principles of Human Cytogenetics G 3,5

Human cytogenetics as related to autosomal and sex chromosomes; technique of tissue culture for study of human chromosomes and karyotype analysis.

Repeatable to a maximum of 30 cr hrs.

#### 911.13 Topographical Anatomy G 3,5

Study of unmounted serial cross sections of selected regions of the human body emphasizing the inter-relationship of structures to one another in a three-dimensional perspective.

Repeatable to a maximum of 30 cr hrs.

#### 911.14 Advanced Regional Dissections G 3,5

Careful dissection of one or more regions of the body, supplemented with literature research.

Repeatable to a maximum of 30 cr hrs.

### 999 Research in Anatomy and Medical Education G 1-18

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Animal Sciences

110 Animal Science Building, 2029 Fyffe Road, 292-6401

### 200 Introductory Animal Sciences U 5

Role, current organization, history, and characteristics of the animal industries in the world.

Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Not open to students with credit for Animl Sc 202, Dairy Sc 202, or Pltry Sc 202.

### 201 Fundamentals of the Horse Industry U 5

Uses of the horse, the economic impact on society, and the basic science of equine nutrition, reproduction, genetics, disease control, housing, and general management.

Au Qtr. 3 cl, 1 3-hr lab. Not open to students with credit for Animl Sc 241.

### 206 Introduction to Aviculture U 3

Provides a basic understanding about the selection, care, and feeding of pet birds in captivity.

Sp Qtr. 3 cl. Prereq: Biology 101 or 113. Not open to students with credit for Pltry Sc 301.

### 207 Dairy Cattle Evaluation U 3

Use of functional type traits in evaluation and selection of dairy cattle.

Sp Qtr. 1 2-hr lab and 1 3-hr lab. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Pltry Sc 202 and soph standing. Not open to students with credit for Dairy Sc 207. Off campus field exp: 1 2-day field trip to dairy herds in the state plus 3-4 class periods.

### 260 Data Analysis and Interpretation for Decision Making U 5

Basic concepts of probability and statistics applied to the interpretation of quantitative data.

Au, Wi Qtrs. 4 cl, 1 2-hr rec/lab. Prereq: Math 130 or 148. Not open to students with credit for Animl Sc 210, Agr Econ 205, Agr Educ 387, Agronomy 210, H&CS 260, Stat 125, 135, 145. Cross-listed in Horticulture and Crop Science. GEC course.

**271 Equine Behavior, Conditioning, and Farrier Science U 4**

Understanding behavior and physiology of conditioning of the horse and using that knowledge to produce humane training methods; practical experience in farrier science.

Au, Wi Qtrs. 1 1-hr cl, 5 2-hr labs. Prereq: Permission of instructor, must have medical insurance.

**290 Creating a Career with the Animal Sciences U 2**

Career development is pursued as a matching of personal interests with the opportunities from guest professionals. Course assignments include enhancing a careers-based web site.

Sp Qtr. 1 2-hr cl. Prereq: Soph standing. Not open to students with credit for Dairy Sc 359.02.

**300 Livestock Selection and Evaluation U 4**

Laboratory exercises employing current standards of animal excellence including carcass value for the selection and improvement of farm livestock.

Wi Qtr. 4 2-hr lab-discussions. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Pltry Sc 202; and jr standing. Not open to students with credit for Animl Sc 500.

**301 Equine Selection and Evaluation U 3**

Understanding the relationship of form to function; evaluating conformation and performance, and orally defending that evaluation.

Wi Qtr. 3 2-hr labs. Prereq: 200 or 201 or Animl Sc 202 or Dairy Sc 202 or Pltry Sc 202. Not open to students with credit for Animl Sc 300. The student will pay a lab fee.

**305 Meat Animal and Carcass Evaluation U 3**

The factors that influence the value of meat animals, carcasses, and wholesale cuts in accordance with recognized grading standards; laboratory practice.

Wi Qtr. 3 2-hr labs. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Pltry Sc 202. Not open to students with credit for Animl Sc 455.

**306 Poultry Science Fundamentals U 5**

Describes classes of poultry and game birds, evaluation of poultry products, incubation, housing, anatomy, diseases, genetics, and nutrition. Laboratories include raising chickens for market.

Sp Qtr. 4 cl, 1 1-hr lab, 1hr arr. Prereq: 200 or Biology 101 or 113. This course is available for EM credit.

**310 Principles of Animal Systems Physiology U 5**

Introductory course that surveys organs/systems within the body and relates the functional physiology of those systems to animal production.

Wi, Sp Qtrs. 5 1-hr cl. Prereq: Biology 101 or 113, and Chem 101 or 121. Not open to students with credit for Animl Sc 310, Dairy Sc 310 or Pltry Sc 310. BER/GEC/LAR course.

**317 Milk Secretion U 3**

Introduction to mammary gland anatomy, milk synthesis, and factors affecting mammary health.

Sp Qtr. 2 1.5-hr cl. Prereq: Biology 101 or 113. Not open to students with credit for Dairy Sc 313.

**320 Principles of Genetic Improvement U 5**

An introduction to the methods available for bringing about genetic change in farm animals.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 200; and 260 or Animl Sc 210 or Agr Econ 205 or Agr Educ 387 or Agronomy 210 or H&CS 260 or Stat 145, and Biology 113 or 101. Not open to students with credit for Animl Sc 420, Dairy Sc 420, or Pltry Sc 420.

**330 Principles of Animal Nutrition U 5**

A study of the fundamental principles of nutrition in mammals and birds.

Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Pltry Sc 202 or Nat Res 200, and Biology 113. Not open to students with credit for Animl Sc 430, Dairy Sc 430, or Pltry Sc 430.

**331 Practical Horse Feeding U 4**

Nutrient needs of the horse; significance of supplements and feeds as they relate to the horse's nutrition and health.

Sp Qtr. 4 cl. Not available for major credit. Not open to students with credit for Animl Sc, Dairy Sc, Pltry Sc 430 or Animl Sc 380 or 632.

**340 Management Intensive Grazing U 3**

The application of scientific principles of plant growth, animal nutrition and behavior to manage grazing systems for profitable, sustainable livestock enterprises.

Sp Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 200 or H&CS 200. Occasional Saturday field trips (2).

**341 Equine Farm Operation and Marketing U 4**

Designing a horse operation; using computer programs for horse farm management; developing promotion, and sales strategies; conducting an auction sale.

Wi Qtr. 2 1-hr cl, 2 2-hr labs. Prereq: 201 or 200.

**355 Meat Science****355.01 Principles of Meat Science U 3**

Analysis of the principles of meat science as related to meat animal value factors, processing technology, and merchandising systems affecting the producer, processor, and consumer.

Au, Wi Qtrs. 3 cl. Prereq: 5 cr hrs in Animal Sciences or Animal Science. Not open to students with credit for Animl Sc 452.

**355.02 Meat Science Products Laboratory U 3**

Procedures and value factors involved in meat animal harvest, carcass evaluation, fresh meat processing, cured-processed meat production, and retail merchandising.

Au, Wi Qtrs. 2 3-hr labs. Prereq or concur: 355.01 or Animl Sc 452. Not open to students with credit for Animl Sc 453.

**360 Global Food and Agriculture U 5**

The integration of food, agriculture, environment, resources, technology, culture and trade on a global scale.

Wi Qtr. 3 1.5-hr cl. Not open to students with credit for Animl Sc 375.

**400 Animal Growth and Development U 4**

Evaluation of biological processes which contribute to prenatal and postnatal growth of meat animals.

Au Qtr. 4 cl. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pltry Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Pltry Sc 420 and 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430. Not open to students with credit for Animl Sc 460.

**410 Application of Reproductive Management to Livestock U 4**

A practical introduction to the various tools and techniques available to improve the reproductive performance of livestock.

Wi Qtr. 4 cl. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pltry Sc 310 or permission of instructor. Not open to students with credit for Animl 412 or Dairy Sc 412.

**430 Feeds and Feeding U 5**

Evaluation of feedstuffs used and dietary formulations for swine, poultry, sheep, beef, and dairy; practical feeding programs for each species will be presented.

Sp Qtr. 4 1-hr cl, 1 1-hr recitation; 1-day field trip. Prereq: 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430. Not open to students with credit for Animl Sc 431, Dairy Sc 431, or Pltry Sc 431.

**447 Dairy Herd Management U 5**

Application of scientific principles to practical herd management, analyses of alternatives and decision making.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pltry Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Pltry Sc 420 and 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430. Not open to students with credit for Dairy Sc 440.

**489 Internship in Animal Science U 1-6**

Supervised preplanned employment experience and/or on-site problem solving study program with approved animal production industry or research enterprise; written comprehensive report required.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 15 cr hrs in Animal Sciences or Animal Science. Open only to dept majors. Repeatable to a maximum of 10 cr hrs. Repeatable cr hrs include cr hrs in Pltry Sc 389, Animl Sc 489, and Animal Sciences 489. This course is graded S/U.

**494 Group Studies U 3-5**

Special topic area group studies formally proposed for a specific quarter by an animal science faculty member.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**522\* Genetic Improvement of Beef Cattle U G 3**

Use of genetic principles to develop breeding plans for selection of seedstock herds for economic traits and their utilization in commercial production.

Wi Qtr. 3 cl. Prereq: 320 or Animl Sc 420 or Dairy Sc 420 or Pltry Sc 420. Not open to students with credit for Animl Sc 522.

**523 Genetic Improvement of Swine U G 3**

Application of genetic principles for swine improvement; selection, mating, testing for predicting genetic value, and use of data in decision-making criteria for economically important characteristics.

Sp Qtr. 3 cl. Prereq: 320 or Animl Sc 420 or Dairy Sc 420 or Pltry Sc 420. Not open to students with credit for Animl Sc 523.

**530 Comparative Animal Nutrition U 5**

Advanced principles of animal nutrition.

Wi Qtr. 5 cl. Prereq: 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430, jr standing, and second writing course. Not open to students with credit for Animl Sc 530, Dairy Sc 530 or Pltry Sc 530. GEC course.



**540 Feedlot Management U G 3**

The impact of nutrition, growth and development, economics, and desired carcass characteristics on the management of feedlot animals.

Sp Qtr. 2 1.5-hr cl. Prereq: 310, 320, and 330 or permission of instructor.

**541 Equine Production U G 5**

The application of scientific principles to the production of horses. Includes farm design, reproductive management, genetics, nutrition, health, marketing and behavior of the horse.

Sp Qtr. 3 1-hr cl, 2 2-hr labs. Prereq: 200 or 201 or Animl Sc 202 or Dairy Sc 202 or Pltry Sc 202 or Animl Sc 241, and 331 or Animl Sc 380 or 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430. Not open to students with credit for Animl Sc 541.

**542 Beef Cattle Production and Management U G 5**

The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of beef cattle.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pltry Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Pltry Sc 420 and 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430. Not open to students with credit for Animl Sc 542.

**543 Swine Production U G 5**

The application of science and basic principles of nutrition, physiology, genetics, health, economics, meats, and housing in integrated management systems for modern swine production.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pltry Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Pltry Sc 420 and 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430. Not open to students with credit for Animl Sc 543.

**544 Sheep Production and Management U G 5**

The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of sheep.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pltry Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Pltry Sc 420 and 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430. Not open to students with credit for Animl Sc 544.

**546 Commercial Poultry Management U G 5**

A study of commercial poultry management utilizing an enterprise approach.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Pltry Sc 202 and 310 or Animl Sc 310 or Dairy Sc 310 or Pltry Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Pltry Sc 420 and 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430; or Avian Biology minor, and sr standing. Not open to students with credit for Pltry Sc 546.

**550 Meat Processing U G 4**

Fundamental changes in soft animal tissues resulting from comminution and application of chemicals and heat.

Au Qtr. 2 cl, 2 2-hr labs. Prereq: 355.01 or Animl Sc 452. Not open to students with credit for Animl Sc 550.

**593 Individual Studies U G 2-5**

Special assignments and elementary research; problems assigned after consultation with instructor in charge.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. Repeatable cr hrs include cr hrs in Animl Sci 593, Animl Sc 593, Dairy Sc 593, and Pltry Sc 593. This course is graded S/U.

**597 Issues Concerning Use of Animals by Humans U 5**

The historical, biological, ethical, nutritional, and economic issues of using animals to meet human needs.

Su, Au, Wi, Sp Qtrs. 2 2.5-hr cl. Prereq: Sr standing. Not available for major credit in Animal Sciences. GEC/LAR course. Contemporary issues course.

**600 Capstone Course in Animal Sciences U 5**

Relationship of the animal sciences to the emerging and continuing issues facing society.

Wi, Sp Qtrs. 3 2-hr cl. Prereq or concur: 447 or 541 or 542 or 543 or 544 or 546 or 647 and second writing course. Not open to freshmen or sophomores. GEC course.

**610 Physiology of Reproduction U G 5**

Physiology and endocrinology of the reproductive systems; examination of basic mechanisms governing reproduction in various species.

Wi Qtr. 3 cl, 1 hr recitation, 1 2-hr lab. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pltry Sc 310 and second writing course. Not open to students with credit for Animl Sc 612 or Dairy Sc 612. GEC course.

**616 Poultry Physiology U G 5**

An organ system approach to avian physiology with particular emphasis on adaptation to modern production systems, animal care, growth, and reproduction.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: 310. Not open to students with credit for Pltry Sc 614.

**617 Physiology of Lactation U G 3**

The physiological, endocrine, nutritional, and environmental factors influencing the synthesis and ejection of milk.

Au Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: 20 cr hrs Animal Science, Dairy Science or vertebrate biology. Not open to students with credit for Animl Sc 610 or Dairy Sc 610.

**618 Molecular Events in Tissue Growth and Development U G 4**

A molecular developmental approach to the study of tissue growth, structure, and function in animals and humans.

Sp Qtr. 2 2-hr cl. Prereq: 310, or Animl Sc/Dairy Sc/Pltry Sc 310, and Biochem 511 or permission of instructor.

**620 Applied Animal Molecular Genetics U G 4**

Provide understanding of molecular genetic tools currently used in animal health and improvement programs.

Sp Qtr. 2 1.5-hr cl. Prereq: 320, Biochem 511, Mol Gen 500, or permission of instructor.

**643 Advanced Swine Production Science U G 5**

Integration of swine production advances and their application to modern swine service systems; swine literature will be evaluated.

Sp Qtr. 3 2-hr cl. Prereq: 543 or Animl Sc 543 or permission of instructor. Not open to students with credit for Animl Sc 563.

**647 Evaluation and Integration of Research for Dairy Operations U G 5**

Integration of scientific principles to maximize efficiency in dairy farm operations.

Sp Qtr. 5 cl. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pltry Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Pltry Sc 420 and 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430. Not open to students with credit for Dairy Sc 640. Off campus field exp: 2 1-day field trips to establish dairy operations.

**650 Advanced Meat Technology U G 3**

Evaluation of scientific contribution to meat products and processing.

Sp Qtr. 2 cl, 2 1-hr labs. Prereq: 15 cr hrs chem, 5 cr hrs micrbiol, and 5 cr hrs anatomy. Not open to students with credit for Animl Sc 650.

**655 Laboratory Analysis of Meat Products U G 5**

Analysis of meat products by physical, chemical, and microbiological techniques.

Wi Qtr. 2 cl, 2 1-hr labs, 4 hrs arr. Prereq: 355.01 and 355.02 or Animl Sc 452 and 453 or permission of instructor, 10 cr hrs chem and 5 cr hrs micrbiol. Not open to students with credit for Animl Sc 651.

**656\* Egg and Poultry Products Technology U G 5**

Physical, chemical, and microbiological properties of eggs and poultry, and relationship of these properties to processing methods, product quality, and utilization.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: Chem 102 or 122, Micrbiol 509 or 520, and second writing course. Not open to students with credit for Pltry Sc 650. GEC course.

**660 Quality Control Interpretation U G 3**

Sampling, statistical plotting, and chart interpretation using examples drawn from the food area.

Sp Qtr. 3 cl. Not open to students with credit for Animl Sc 654.

**670 Systemic Approaches to the Management of Animal Production Units U 5**

Management and learning with a systems thinking perspective is emphasized. Decision making and problem solving is accomplished by integrating scientific, economic, and societal factors.

Au, Sp Qtrs. 3 2-hr cl. Prereq: 260 or Agronomy 210 or Animl Sc 210 or Ag Econ 205 or Agr Educ 387 or Stat 145 or Nat Res 222 and 200 or Animl Sc 202 or Dairy Sc 202 or Pltry Sc 202 and second writing course or permission of instructor. Not open to students with credit for Dairy Sc 650. GEC course.

**676\* Prevention and Control of Avian Diseases U G 5**

The etiology, recognition, prevention, and control of the important diseases of poultry and game birds.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: Chem 102 or 122 and Micrbiol 509 or 520. Not open to students with credit for Pltry Sc 640.

**H683 Honors Projects U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr Int H590.01, enrollment in honors program, and permission of honors supervisor. Repeatable to a maximum of 10 cr hrs. Repeatable as H683 or in combination with 293, 593, H593, 693, or H693. This course is graded S/U.

**693 Individual Studies U G 3-5**

Special assignments and advanced research; problems assigned after consultation with the instructor in charge.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 15 cr hrs. Repeatable cr hrs include cr hrs in Animl Sci 693, Animl Sc 693, Dairy Sc 693, and Pltry Sc 693. This course is graded S/U.

**694 Group Studies U G 3-5**

Special assignments and advanced research; problems assigned after consultation with the instructor in charge.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**710\* Advanced Reproductive Physiology U G 4**

Recent advances in research in mammalian reproduction.

Sp Qtr. 2 2-hr cl. Prereq: 610 or Animl Sc 612 or Dairy Sc 612 and acceptable courses in physiol, cbn&anat, and biochem. Not open to students with credit for Animl Sc 710 or Dairy Sc 710.

**720 Animal Genetics****720.01\* Genetics of Animal Populations I U G 3**

Parameters of static populations, genetic arrays and equilibria, and statistical measures; partitioning the phenotypic variance mutation, migration, selection, and chance.

Au Qtr. 3 cl. Prereq: 320 or Animl Sc 420 or Dairy Sc 420 or Pltry Sc 420 or Mol Gen 500, and Mol Gen 650 or equiv. Not open to students with credit for Animl Sc 721, Dairy Sc 721, or Pltry Sc 721.

**720.02\* Genetics of Animal Populations II U G 3**

Selection for polygenic characters, mating systems, and development of breeding plans.

Au Qtr. 3 cl. Prereq: 720.01 or Animl Sc 721 or Dairy Sc 721 or Pltry Sc 721. Not open to students with credit for Animl Sc 722, Dairy Sc 722, or Pltry Sc 722.

**730 Animal Physiology and Nutrition****730.01 Ruminant Physiology, Nutrition, and Metabolism G 3**

Study of physiology and nutrient metabolism of ruminants; microbial metabolism and fermentative processes will be discussed.

Wi Qtr. 2 1.5-hr cl. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pltry Sc 310, and 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430, and Biochem 511 or permission of instructor. Not open to students with credit for Animl Sc 731 or Dairy Sc 731.

**730.02 Research Techniques in Animal Nutrition G 3**

Practical exposure to the techniques involved in ruminant and nonruminant research.

Au Qtr. 2 3-hr labs. Prereq: 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430 and Biochem 511, or permission of instructor. Not open to students with credit for Animl Sc 732 or Dairy Sc 732.

**730.04\* Nutrition in the Support of Reproduction U G 3**

A functional approach to the study of nutrition for support of reproduction in animals and humans.

Sp Qtr. 3 cl. Prereq: 410 or 610 or Animl Sc 412 or Dairy Sc 412 or Animl Sc 612 or Dairy Sc 612, 330 or Animl Sc 430 or Dairy Sc 430 or Pltry Sc 430 and Biochem 511. Not open to students with credit for Animl Sc 734, Dairy Sc 734, or Pltry Sc 734.

**740 Principles of Toxicology I G 3**

Introduction to the principles of toxicology and the factors that influence the expression of drug and chemical induced toxicological effects on major organ systems.

Wi Qtr. 3 cl. Prereq: Biochem 613 or equiv, Physiol 312 or equiv. Not open to students with credit for Pharmacy 740 or Vet Bios 740. Cross-listed in Pharmacy and Veterinary Biosciences.

**741 Principles of Toxicology II G 5**

Toxicological effects of major classes of chemicals and current issues in toxicology, including air pollution, water quality, and hazardous waste.

Sp Qtr. 5 cl. Prereq: 740 or Pharmacy 740 or Vet Bios 740; Biochem 511 or equiv, Physiol 602 or equiv. Not open to students with credit for Pharmacy 741 or Vet Bios 741. Cross-listed in Pharmacy and Veterinary Biosciences.

**810 Advances in Physiology of Domestic Animals**

Au, Wi, Sp Qtrs. 1 4-hr cl. Prereq: Written permission of instructor, acceptable courses in physiol, cbn&anat and biochem. Not open to students with credit for Animl, Dairy or Pltry Sc 810.

**810.01\* Anterior Pituitary Function G 5**

Au Qtr.

**810.02\* Endocrinology of Reproduction G 5**

Wi Qtr.

**810.03 Immunology and Immunogenetics G 5**

Sp Qtr.

**810.04 Molecular Endocrinology G 5**

Combined lecture/laboratory course on the molecular and cellular basis of hormone action and state-of-the-art methodologies in molecular endocrinology.

Su Qtr. Prereq: Biochem 511 or equiv and permission of instructor.

**810.05\* Mammalian Germ Cells G 5**

Sp Qtr.

**820 Advanced Studies in Animal Genetics**

3 cl. Prereq: Acceptable courses in animal genetics, math, and statistics. Not open to students with credit for Animl, Dairy or Pltry Sc 820.

**820.02\* Research Methods in Animal Genetics I G 3**

Wi Qtr. Repeatable to a maximum of 12 cr hrs.

**820.04\* Research Methods in Animal Genetics II G 3**

Wi Qtr. Prereq: 820.02. Repeatable to a maximum of 12 cr hrs.

**830 Advanced Studies in Nutrition**

Advanced concepts in nutrition.

Au, Wi, Sp Qtrs. 3 or 5 cl. Prereq: 530 or Humn Ntr 610; Fd Sc&Te 761 and 762; 10 grad cr hrs in physiol. Not open to students with credit for Fd Sc&Te 830 or Humn Ntr 830. Cross-listed in Food Science and Technology, and Human Nutrition and Food Management.

**830.01\* Energy/Lipids G 5**

Sp Qtr. 5 cl. Prereq: Fd Sc&Te 761.

**830.02\* Vitamins/Minerals G 5**

Wi Qtr. 5 cl. Prereq: Humn Ntr 763.

**830.03\* Proteins and Amino Acids G 3**

Wi Qtr.

**830.07\* Rumen Microbiology G 3**

Su Qtr. This course is not available in humn ntr or pltry sc.

**830.08\* Carbohydrates G 3**

Au Qtr.

**850\* Food in International Agriculture G 3,5**

A study of international food production, processing, and utilization.

Su Qtr. 5 cl, 1 1-hr lab. Not open to students with credit for Animl Sc 856. Repeatable to a maximum of 6 cr hrs.

**860\* Scientific Philosophy and the Work of Scientists G 3**

Historical and future perspectives of research in the animal sciences, role of theory and evidence in developing scientific knowledge, and presentations of reports.

Su Qtr. 2 1.5-hr cl. Prereq: Completed 30 cr hrs in grad studies, introductory statistics course. Not open to students with credit for Dairy Sc 885.

**868 Molecular Biology Techniques G 5**

Combined lecture/laboratory in the techniques of nucleic acid isolation, analysis, hybridization, sequencing, cloning, expression, and associated biotechnologies.

Su Qtr. 5-hr cl, 5 3-hr labs. Prereq: Biochem 521 or 613 or equiv. Not open to students with credit for FdSc&Te 868. Cross-listed in Food Science and Technology.

**890 Seminar**

Discussions of current animal science research.

Su, Au, Wi, Sp Qtrs. 1 1-hr cl. Prereq: Grad standing Animal Sciences or permission of instructor. Students may not register for more than 10 cr hrs under this number.

**890.01 General Seminar G 1**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**890.02 Nutrition G 1**

Sp Qtr. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**890.03 Physiology G 1**

Sp Qtr. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**890.04 Genetics G 1**

Sp Qtr. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**890.05 Quality and Safety of Animal Products G 1**

Sp Qtr. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**890.06 Interdisciplinary G 1**

Sp Qtr. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**898 Interdepartmental Seminar in Nutrition G 1**

A seminar in nutrition and related fields.

Sp Qtr. Repeatable to a maximum of 5 cr hrs. Cross-listed in Food Science and Technology, and Human Nutrition and Food Management. This course is graded S/U.

**993 Individual Studies G 1-5**

Exploratory research and advanced assignments; students elect problems after conference with the instructor in charge.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research G 1-18**

Research for thesis or dissertation purposes only.  
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Anthropology**

244 Lord Hall, 124 West 17th Avenue, 292-4149

**200 Introduction to Physical Anthropology U 5**

A scientific examination of humans as a biological and cultural organism based on primate evolution from living and fossil evidence; evolutionary theory and population adaptability.

Su, Au, Wi, Sp Qtrs. 5 cl. H200 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Biology 101 or equiv. Not open to students with credit for 251. NS Admis Cond course. GEC bio sci course.

**201 World Prehistory: An Anthropological Perspective U 5**

World prehistory from the origin of human culture through the development of civilization illustrated by selected examples; archaeological field method; concepts of analysis and interpretation.

Su, Au, Wi, Sp Qtrs. 5 cl. H201 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 261. GEC soc sci individuals and groups course. SS Admis Cond course.

**202 Peoples and Cultures: An introduction to Cultural Anthropology U 5**

Comparative survey of tribal and peasant peoples in the several world culture regions; culture concepts; study of selected topics.

Su, Au, Wi, Sp Qtrs. 5 cl. H202 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 210. GEC soc sci individuals and groups course. SS Admis Cond course.

**241 The Culture and Cultures of the Middle East U 5**

Introduction to the culture of the Middle East as lived in its villages, towns, and cities.

Au, Sp Qtrs. 2 2-hr cl. Not open to students with credit for NELC 241. Cross-listed in Near Eastern Languages and Cultures. GEC arts and hums cultures and ideas course.

**294 Group Studies U 2-5**

Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 or hrs.

**300 Human Origins U 5**

The search for human origins through a reconstruction of the human and non-human primate fossil records of the last 60 million years; emphasis on human skeletal, behavioral, and social patterns.

Au, Wi, Sp Qtrs. 2 2-hr, 1 1-hr cl. Prereq: 200 or permission of instructor. Not open to students with credit for 530.

**301 Modern Human Physical Variation U 5**

Survey of modern human biological diversity; examination of the underlying evolutionary and adaptational mechanisms responsible; exploration of the interplay between biology and behavior in adaptation.

Au, Wi, Sp Qtrs. 2 2-hr cl, 1 hr arr. Prereq: 200 or permission of instructor. Not open to students with credit for 535.

**350 Prehistoric Indians of the Ohio Valley U 5**

The archaeology and cultural history of the Ohio Valley from the first human settlement to European colonization, emphasizing the Adena, Hopewell, and Ft Ancient traditions.

Sp Qtr. 3 cl, 3 weekend field trips. Prereq: 201 or permission of instructor.

**401 Fundamentals of Archaeology U 5**

Introduction to basic archaeological theory and practice including fundamental field and laboratory; principles of survey, excavation, chronological analysis, typology, and palaeoethnography.

Au Qtr. 4 cl, 1 1-hr lab. Prereq: 201 or permission of instructor.

**402 Physical Anthropology of Selected World Regions**

Description and analysis of simple and complex hereditary characteristics in order to evaluate origin adaptations and affinities of populations in a world region.

5 cl or 2 2-hr cl. Prereq: 200 or permission of instructor.

**402.01 North American Indians U 5****402.02 Polynesia and the South Pacific U 5**

Prehistory of Polynesia and South Pacific; development of ethnic and biological variation, associated cultural adaptations, and development of nutritional, infectious, and chronic disease patterns.

Wi Qtr.

**411 Human Ecological Adaptations U 5**

A study of the interactive relationships between humans and their environments, past and present, with a focus on human biology.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 200 or permission of instructor, Zoology or EEOB 400 recommended.

**421 Regional Survey Course in Cultural Anthropology**

A survey of the cultures of selected regions.

Au, Wi, Sp Qtrs. 5 cl.

**421.01 China U 5**

A general survey of the traditional Chinese culture and society; family, kinship, and socio-political organizations; their transformations during the last century.

Not open to students with credit for 414.

**421.02 Southeast Asia U 5**

Survey of the peoples of the region and their cultures; prehistoric origins; diversity and similarity; processes of modernization.

Not open to students with credit for 414.

**421.08 Indians of North America U 5**

Development of culture change in North American Indians.

Not open to students with credit for 412. GEC soc sci individuals and groups course.

**451 Crossroads: The Middle East Before Sumer U 5**

The roles of North Africa and Southwest Asia as initiators and disseminators of cultural developments before the invention of writing.

Sp Qtr. 2 2-hr cl, 1 1-hr cl.

**525 History of Anthropological Theory U G 5**

Major theoretical viewpoints in anthropology seen in their historical context.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 202 or permission of instructor.

**553 New World Prehistory**

Detailed surveys of native American prehistory in select regions from the earliest evidence of occupation to the intrusion of Old World populations. Prereq: 201.

**553.01 Aztecs, Maya, and their Predecessors U G 5**

The archaeology and cultural history of Mexico and Guatemala with emphasis on agricultural origins and the development of complex society.

Au Qtr. 4 cl. Not open to students with credit for 551.02.

**553.02 Prehistoric Indians of Eastern North America U G 5**

Survey of the archaeology and cultural history of North America east of the Rocky Mountains.

Sp Qtr. 4 cl. Not open to students with credit for 550, 551, or 551.01.

**553.03 Prehistoric Indians of Western North America U G 5**

Survey of the archaeology and culture of North America north of Mexico and west of the Rocky Mountains, including the American Southwest.

Wi Qtr. 4 cl. Not open to students with credit for 550, 551, or 551.01.

**565 Archaeological Training Expedition U 8-16**

Survey and excavation of prehistoric archaeological sites; trains students in methods and techniques of archaeological field research.

Su Qtr. Full time in expedition camp. Prereq: 401 or equiv and written permission of instructor. Not open to students with credit for 664. 8 or hrs for either term.

**597 Issues of the Contemporary World**

Prereq: Sr standing. GEC contemporary world courses.

**597.01 Cultural Conflict in Developing Nations U 5**

Analysis of cultural conflict in developing nations resulting from rapid and extensive technological and social change.

Au, Sp Qtrs. 5 cl. Not open to students with credit for 450.

**597.02 Women, Culture, and Development U 5**

An analysis of the dramatic changes occurring in women's lives in response to development and modernization; developing and developed countries contrasted.

Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 460.

**H597.03 The Prehistory of Environment and Climate U 5**

History of modern biotic communities, biological evidence of climatic change during the late glacial and Holocene, and exploration of the responses of terrestrial ecosystems to climatic functions.

Wi Qtr. 2 2-hr cl.

**597.04 The Molecular Revolution: Heredity, Genome Mapping, and Genomania U 5**

Interface of genetic technology, genome project, and health against background of societal tensions, genomania, and dilemmas of genetic testing, and repercussions of molecular revolution.

Su, Wi, Sp Qtrs.

**601 Medical Anthropology**

Biocultural and sociocultural aspects of health in modern and prehistoric populations.

**601.01 Biosocial Aspects of Health U G 5**

Biomedical and biosocial influences on problems of human health throughout the world, focusing upon the evolutionary implications of those problems.

Au, Wi, Sp Qtrs. 5 cl.

**601.03 Biocultural Adaptations in Prehistory U G 5**

Effects of culture and biology on adaptations and the evolution of prehistoric populations.

Au, Wi, Sp Qtrs. 5 cl.

**601.04 Global Perspectives on Women's Health U G 5**

A cross-cultural comparison of the political, economic, social, and biological issues surrounding women's health.

Wi Qtr. 2 2-hr cl. Prereq: 200 or permission of instructor.

**602 Special Topics in Archaeology**

Detailed examination of select topics concerning the recovery and analysis of archaeological data.

Prereq: 401.

**602.01 Strategy of Archaeological Field Research U G 5**

Design of archaeological data recovery programs and their implementation through survey, excavation, and other methods.

Sp Qtr. 5 cl, 3 field trips arr. Not open to students with credit for 555, 556, or 556.02.

**602.02 Archaeological Laboratory Methods U G 5**

Practical experience in the laboratory analysis of archaeological materials with emphasis on stone, bone, and ceramic artifacts; preparation of reports on analytical procedures and results.

Wi Qtr. 5 cl, 6 lab hrs.

**602.03 Environmental Archaeology U G 5**

A survey of the principles, methods, and techniques of prehistoric environmental analysis; emphasis on understanding Pleistocene and Holocene environments as they relate to archaeology.

Au Qtr. 5 cl.

**610 Ethnobotany U G 5**

Introduction to the anthropological study of human interactions with the plant world.

Sp Qtr. 2 2-hr cl. Prereq: One course in anthrop or plant bio at the 200 level or above, or permission of instructor.

**620 Special Topics in Cultural Anthropology**

Detailed examination of topics of special interest in contemporary cultural anthropology.

Prereq: 202 or equiv or permission of instructor.

**620.02 The Anthropology of Women U G 5**

Repeatable to a maximum of 16 cr hrs.

**620.03 Peasant Society and Culture U G 5**

**620.05 Cultural Ecology U G 5**

**620.06 Folkloristic Anthropology U G 5**

**620.07 Anthropology of Education U G 5**

Repeatable to a maximum of 16 cr hrs.

**620.11 Anthropology of Religion U G 5**

World views in tribal and peasant cultures with an emphasis on religion; integration of religion with other aspects of culture.

Not open to students with credit for 515. Repeatable to a maximum of 16 cr hrs.

**620.13 Tribal Society and Culture U G 5**

Forms of social organization in simpler societies; dynamics of social relations in such societies; a comparison of simpler forms of social structure with complex forms.

Sp Qtr. Not open to students with credit for 505.

**620.15 Economic Anthropology U G 5**

An analysis of economic rationality in non-market and market societies; resource allocation, work organization, product disposition, exchange, money, trade, and development.

Sp Qtr.

**620.17 East Asian Women U G 5**

Cross-cultural perspectives on the status and roles of Chinese, Japanese, and Korean women in various social settings, including the family, work places, and national economy.

Sp Qtr.

**620.18 Theoretical Issues and the Ethnography of the Middle East U G 5**

The major intellectual currents informing contemporary ethnographic research in the Middle East.

Wi, Sp Qtrs.

**626 Urban Anthropology U G 5**

An examination of urban life and the variety of the urban experience around the world; and the nature of anthropological research in cities.

Sp Qtr. 5 cl. Prereq: 202 or permission of instructor. Not open to students with credit for 620.04.

**630 Language and Culture in Education U G 5**

Examination of the problems of educating children of diverse cultural and linguistic backgrounds in the U.S. school system.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 202 or equiv or grad standing.

**640 Special Topics in Physical Anthropology**

Topics of current concern to physical anthropologists.

Prereq: 200 or equiv or permission of instructor.

**640.01 Monkeys, Apes, and Humans (Primate Behavior) U G 5**

**640.02 Growth and Development U G 5**

**640.03 Dental Anthropology U G 5**

**640.04 Forensic Anthropology U G 5**

An introduction to the application of physical anthropology theory and methods for forensic purposes.

Sp Qtr.

**640.05 Contemporary Concepts in Forensic Science U G 5**

An overview of modern forensic techniques and theories derived from the established disciplines of science, emphasizing anthropology and archaeology.

Sp Qtr.

**656 Issues in Archaeological Theory U G 5**

Examination of the assumptions and concepts underlying analysis of archaeological data; methods of reconstructing cultural history, past lifeways, and explaining cultural change.

Wi Qtr. 4 cl. Prereq: 401. Not open to students with credit for 556.01.

**685 Summer Field School in Archaeology U G 3-12**

Practical experience in archaeological fieldwork including site survey, excavation, surveying and mapping, preservation, and other related methods and techniques of data recovery.

Su Qtr. Full time in expedition camp. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Field school is conducted at a site within commuting distance of the Columbus campus.

**693 Individual Studies**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

**693.01 Theory U G 1-5**

Repeatable. This course is graded S/U.

**693.02 History U G 1-5**

Repeatable. This course is graded S/U.

**693.03 Anthropological Linguistics U G 1-5**

Repeatable. This course is graded S/U.

**693.04 Research Methodology U G 1-5**

Repeatable. This course is graded S/U.

**693.05 Prehistory U G 1-5**

Repeatable. This course is graded S/U.

**693.06 Ethnography U G 1-5**

Repeatable. This course is graded S/U.

**693.07 Physical Anthropology U G 1-5**

Repeatable. This course is graded S/U.

**694 Group Studies U G 2-15**

Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701 Advanced Topics in Physical Anthropology**

Discussion of advanced topics in human variation and hominid evolution; emphasis on critical analysis and evolution of theoretical topics in research design.

2 2-hr cl, 1 hr arr. Prereq: Permission of instructor.

**701.01 Modern Human Physical Variation U G 5**

Survey of modern human biological diversity; examination of the underlying evolution and adaptational mechanisms responsible; exploration of the interplay between biology and behavior in adaptation.

Not open to students with credit for 535 or 803.04.

**701.02 Hominid Paleoanthropology U G 5**

A comprehensive study of the fossil hominids; fossils of Homo sapiens and their relation to other fossil hominids.

**702 Theories in Cultural Anthropology U G 5**

Major theoretical orientations in cultural anthropology; the developmental histories of the major theoretical schools and examination of their respective philosophical foundations.

Au Qtr. 2 2-hr cl, arr time. Not open to students with credit for 803.01 or 803.02.

**703 Culture and Language U G 5**

Development and range of anthropological concerns with language; emphasis on utility of linguistic approaches, methods, and theories to other subdisciplines of anthropology.

Au, Wi, Sp Qtrs. 22-hr cl. Prereq: 675 or Linguist 601, or equiv and permission of instructor.

**710 Field Methods in the Study of Culture U G 5**

Theoretical and practical preparation for the field study of cultures.

Au, Wi Qtrs. 2 2-hr cl, arr time. Prereq: Permission of instructor. Not open to students with credit for 810G.

**750 Osteology and Odontology Laboratory U G 6**

Advanced theoretical and practical study of an osteological or odontological problem from data collection through data analysis to the presentation of results.

Wi, Sp Qtrs. 2 3-hr cl. Prereq: 601.03 and 640.03. Repeatable to a maximum of 18 cr hrs.

**H783 Honors Research U 3-5**

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the anthrop courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in anthrop. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**801 Seminars in World Prehistory**

Au, Wi, Sp Qtrs. Prereq: Admission to grad program.

**801.01 Archaeology of Hunter-Gatherer Societies G 5**

Advanced study of hunter-gatherer band society from theoretical, ethnographic, and archaeological perspectives.

**801.02 Origins of Food Production G 5**

Advanced theoretical and comparative study of the origins of food production in the Old and New Worlds.

Not open to students with credit for 803.07.

**801.03 The Archaeology of Complex Societies G 5**

Advanced theoretical and comparative study of the rise and fall of complex societies in antiquity in the Old and New Worlds.

Wi Qtr. 1 3-hr cl.

**805 Seminars in Ethnology G 3-5**

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 45 cr hrs. Not more than 10 of which shall be in any one of the following topics.

A— North America

D— East Asia

F— South Asia

K— Caribbean

L— Africa

P— Southeast Asia: Kinship Marriage and Family

Q— Southeast Asia: Religious Systems and World Views

R— Asian Anthropology and Anthropologists: Theoretical Perspectives

**810 Seminars in Cultural Anthropology G 3-5**

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 45 cr hrs. Not more than 10 of which shall be in any one of the following topics.

A— Nature of Culture

D— Enculturation

E— Social Organization

F— Religious Behavior

G— Acculturation, Change, and Stability

I— Peasant Cultures

J— Cultural Evolution

K— Human Ecology

L— Anthropology of Political Systems

P— Anthropology of Education

Q— Study Design and Data Analysis

R— Theory and Problems in Cultural Anthropology

T— Experiments in Anthropological Fieldwork: Realism and Reflexivity

U— Ethnographic Field Experience

V— Women

X— Political Economy of Development and Underdevelopment

Y— Revolution and Revitalization Movements

Z— Ethnopsyschiatry

**820 Seminars in Physical Anthropology G 3-5**

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 45 cr hrs. Not more than 10 of which shall be in any one of the following topics.

A— Evolutionary Theory

D— Field and Laboratory Methods

E— Fossil Hominids

F— Non-Human Primate Behavior

G— Population Genetics

I— Biocultural Adaptation

J— Primate Anatomy

K— Biomedical Anthropology

L— Field Methods in Primate Behavior

M— Field Methods in Primate Behavior

N— Special Topics

P— Human Growth and Development

Q— Special Topics

R— Quantitative Methods

**830 Seminars in Prehistory G 3-5**

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 30 cr hrs. Not more than 10 of which shall be in any one of the following topics.

A— Method and Theory

D— Archaeology of High Civilizations

E— Special Problems in Archaeology

F— Old World History

G— North American Archaeology

**880 Case Studies in Forensic Anthropology G 1**

Discussion of actual forensic cases by students who have worked on them; application of theoretical forensic anthropology to practical situations.

Sp Qtr. 1 1-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**993 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. 2 conf hrs. Prereq: Written permission of instructor. Repeatable. This course is graded S/U.

A— Theory

B— History

C— Anthropological Linguistics

D— Research Methods

E— Prehistory

F— Ethnology

G— Physical Anthropology

H— Unclassified

I— Cultural Anthropology

**998 Research in Anthropology: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Anthropology: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Arabic

203 Botany and Zoology Building, 1735 Neil Avenue, 292-9255

**101 Elementary Modern Standard Arabic I**

Developing the ability to use Arabic functionally and communicatively in context; intensive oral interaction with instructor and fellow students; the basics of the writing system.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**102 Elementary Modern Standard Arabic II**

Developing further language ability through learning how to perform certain functions orally and using them with fellow students; reading and writing passages reflecting their abilities.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Au, Wi, Sp Qtrs. Prereq: 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 101.01, or 5 cr hrs of 101.51, or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students may register for 101.51 or 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**103 Elementary Modern Standard Arabic III**

Further language functions requiring the use of more complex structures; intensive oral interaction with instructor and fellow students; reading practice in and out of class.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

**103.01 Classroom Track U 5**

Au, Wi, Sp Qtrs. 5 cl. Prereq: 102.01, or 5 cr hrs of 102.51, or 110. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**103.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 102.01, or 5 cr hrs in 102.51, or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**104 Intermediate Modern Standard Arabic I**

Building on previously acquired functional abilities; using Arabic to express opinion and feelings; oral interaction in the classroom; reading authentic texts of various genres.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

**104.01 Classroom Track U 5**

Au, Wi, Sp Qtrs. 5 cl. Prereq: 103 or 112. Not open to students with credit for 602. This course is available for EM credit.

**104.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 103.01, or 5 cr hrs in 103.51, or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with 80% proficiency required for advancement.

**151 Basic Colloquial Arabic I**

Introduction to phonology and grammar of the spoken language of educated urbanites of the Eastern Arab world.

Su Qtr. Not open to students with credit for 106 or 151 or 201. Does not satisfy ASC foreign language requirement.

**151.01 Classroom Track U 5**

5 cl.

**151.51 Individualized Track U 1-5**

Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 5 cr hrs.

**152 Basic Colloquial Arabic II U 5**

Continuation of 151; analysis of and drill in morphological and syntactic patterns; expansion of vocabulary; practice in conversation.

Wi Qtr. 5 cl. Prereq: 151 or permission of instructor. Not open to students with credit for 107 or 202. Does not satisfy ASC foreign language requirement.

**205 Intermediate Modern Standard Arabic II**

Initiating and sustaining communication; reading and understanding short authentic passages; and writing to express many language functions.

**205.01 Classroom Track U 5**

Au, Wi, Sp Qtrs. 5 cl. Prereq: 104.01 or 5 cr hrs of 104.51. Students must register for and complete 5 cr hrs during the qtr.

**205.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 104.01, or 5 cr hrs of 104.51, or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**241 Culture of the Contemporary Arab World U 5**

A general survey and examination of the socio-cultural structure of the modern Arab world.

Su, Au, Wi, Sp Qtrs. 5 cl. H241 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Taught in English. GEC arts and hums cultures and ideas course.

**253 Intermediate Colloquial Arabic U 5**

Intensive practice in speaking Arabic with emphasis on various cultural aspects of Arab life.

Sp Qtr. 5 cl. Prereq: 152 or permission of instructor. Does not satisfy ASC foreign language requirement. Not open to students with credit for 153.

**293 Individual Studies U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**294 Group Studies U 1-15**

Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

**367 Issues in Arab-American Society, Culture, and Literature U 5**

Discussion, analysis, and writing about issues relating to Arab-American culture, society, and literature within the context of social diversity in the United States.

Au Qtr. 2 2-hr cl. Prereq: English 110 or 111 or equiv, and soph standing or above. GEC second writing and social diversity course.

**371 Classical and Medieval Arabic Literature in Translation U 5**

Reading and analysis of major works of Arabic literature from the 5th to the 17th centuries including classical poetry, the Qur'an, and the Arabian Nights.

Wi Qtr. 5 cl. Not open to students with credit for 271 and 272. GEC arts and hums lit course.

**372 Modern Arabic Literature in Translation U 5**

Reading and analysis of representative works of the 19th and 20th centuries; discussion of development of major movements and genres in modern Arabic literature.

Au Qtr. 5 cl. H372 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for 273 or Wom Stds 372. Cross-listed in Women's Studies. GEC arts and hums lit course.

**400 Arabic Grammar****400.01 Arabic Grammar I U 5**

Accelerated introduction to the structure of modern standard and classical Arabic: phonology, morphology, and syntax, with emphasis on development of reading comprehension skills.

Wi Qtr. 5 cl. Prereq: 104. Not open to students with credit for 402.

**400.02 Arabic Grammar II U 5**

Continuation of 400.01 with emphasis on the grammatical analysis and comprehension of authentic texts selected from different periods and genres.

Sp Qtr. 5 cl. Prereq: 400.01 or permission of instructor.

**401 Intermediate Literary Arabic Reading U 5**

Developing reading skills through reading adapted and authentic Arabic texts; selections reflect cultural and literary aspects of Arab-Islamic civilization.

Au Qtr. 5 cl. Prereq: 205 or permission of instructor.

**403 Intermediate Arabic Conversation and Composition U 5**

Practice in aural comprehension, conversation, and controlled compositions on various aspects of Arabic culture.

Sp Qtr. 5 cl. Prereq: 205. Not open to students with credit for 604.

**603 Advanced Arabic Conversation and Composition U G 5**

Intensive practice in speaking and writing Arabic at an advanced level based on contemporary literary usage; conducted entirely in Arabic.

Wi Qtr. 5 cl. Prereq: 403 or permission of instructor. Not open to students with credit for 601.

**610 Introduction to Arabic Linguistics U G 5**

An introduction to the structure of the Arabic language, both spoken and written.

Wi Qtr. 5 cl. Prereq: 103 or 152, and Linguist 601, or permission of instructor.

**611 History of the Arabic Language U G 5**

Survey of the evolution of the Arabic language in its cultural and historical setting.

Wi Qtr. 5 cl. Prereq: Permission of instructor. GEC third writing course.

**615 Translation: Theory and Practice U G 5**

Examination of some general guidelines for translating from Arabic to English or from English to Arabic, depending on the first language of the student.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Advanced reading proficiency in second language.

**626 Introduction to the Arabic Qur'an U G 5**

A linguistic, literary, and cultural analysis of selected chapters from the Qur'an.

Au, Sp Qtrs. 2 2-hr cl. Prereq: 403.

**627 Classical Arabic Poetry U G 5**

Selected readings from classical and medieval Arabic poetry; Arabic metrics and literary theory.

Sp Qtr. 5 cl. Prereq: 403.

**628 Classical Arabic Prose U G 5**

Selected readings reflecting the evolution of Arabic prose literature from its origins to the late Abbasid period.

Wi Qtr. 5 cl. Prereq: 403.

**651 Contemporary Arabic Prose Fiction U G 5**

Reading and analysis of short stories and novels representative of major developments and trends of the 20th century.

Au Qtr. 5 cl. Prereq: 403. Not open to students with credit for 622 or 625.

**652 Contemporary Arabic Poetry and Drama U G 5**

Reading and analysis of plays and poems representative of major developments and trends of the 20th century.

Sp Qtr. 5 cl. Prereq: 403. Not open to students with credit for 623 or 624.

**671 The Qur'an in Translation U G 5**

An introduction, in English, to the literary, religious, and cultural implications of the fundamental Book of Arabic literature and of Islamic civilization.

Au Qtr. 5 cl.

**672 Arabic Folk Narrative in Translation U G 5**

Literary and cultural aspects of 1001 Nights and other popular narratives (epics, legends, folktales) in the Arab world.

Sp Qtr. 2 2-hr cl.

**680 Basic Bibliographic and Reference Tools in Arabic and Islamic Studies U G 5**

Sp Qtr. 5 cl. Prereq: 10 cr hrs in Middle Eastern history or literature or equiv.

**692 Workshop U G 1-9**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su Qtr. Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable to a maximum of 27 cr hrs. This course is graded S/U.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**710 Studies in Arabic Linguistics U G 5**

Advanced analytical study of synchronic, diachronic, sociolinguistic, and dialectal topics and problems.

Su, Au, Wi, Sp Qtrs. 2-2-hr cl. Prereq: 610 or 611 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**721 Studies in Arabic Poetry U G 5**

Advanced study of specific poetic periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials.

Su, Au, Wi, Sp Qtrs. 4 or 5 cl. Prereq: 10 cr hrs of Arabic literature at the 600 level or equiv. Repeatable to a maximum of 15 cr hrs.

**722 Studies in Arabic Prose U G 5**

Advanced study of specific periods, authors and/or genres of prose writing (literary or non-literary) involving extensive reading and discussion of primary and secondary materials.

Su, Au, Wi, Sp Qtrs. 4 or 5 cl. Prereq: 10 cr hrs of Arabic literature at the 600 level or equiv. Repeatable to a maximum of 20 cr hrs.

**H783 Honors Research U 3-5**

Offers undergraduates with special aptitudes a greater opportunity to do independent study and research than is possible in normal course work.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the Arabic courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 quarters are required of candidates for the degree BA with distinction in Arabic. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**801 Teaching Arabic at the College Level G 5**

Methods and techniques for the teaching of Arabic at the college level.

Au Qtr. 2-wk intensive workshop followed by 1 2-hr cl weekly. Prereq: TA in NELC or permission of instructor. For students enrolled in this course, the minimum number of hrs required for graduation is increased by 5 cr hrs.

**811 Seminar in Arabic Studies G 5**

Intensive investigation of a selected topic or problem in Arabic linguistics, philology, literature, or literary culture.

Su, Au, Wi, Sp Qtrs. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. Preparation of major research paper is required.

**998 Research in Arabic G 1-25**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Architecture

109 Brown Hall, 190 West 17th Avenue, 292-1012

**100 Architecture Survey U 1**

Introduction to the University, the Knowlton School of Architecture and the professions of architecture, city and regional planning and landscape architecture.

Au, Wi, Sp Qtrs. 2 cl. Cross-listed in Landscape Architecture.

**200 Outlines of Architecture U 3**

Introduction to the discipline of landscape architecture and architecture through the analysis of the built environment, concepts and themes in design, focusing on historical examples.

3 cl. H200 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Larch 200. Cross-listed in Landscape Architecture. Required for students intending to major in arch. VPA Admis Cond course.

**201 Introduction to Architectural History U 3**

Introduction to architecture, emphasis on three-dimensional qualities of complex architectural form and space as determined by cultural history.

3 cl. Not open to 3rd and 4th year arch students. VPA Admis Cond course.

**202 Introduction to Basic Design in Architecture U 5**

Introduction to basic design: problem solving techniques; language of design; exploration of space and object through graphic exercises, drawings and models.

9 lab hrs. Not open to students with credit for Larch 151. Cross-listed in Landscape Architecture as 151. VPA Admis Cond course.

**241 Architectural Design I U 6**

Studio introduction to architectural design problem solving; concepts of architectural aesthetic principles; value drawing techniques; model building; anthropometrics; and human gathering and circulation patterns.

Au Qtr. 3 cl, 9 lab hrs. Prereq: 200 and 202; Math 150 and 117 or equiv; Physics 111 and 112 or equiv and submission of portfolio. Only open to students enrolled in AHR, who have completed the math, physics, and AHR prerequisites with a 2.15 CPHR; have earned a 2.15 CPHR with at least 45 earned hrs; or permission of the undergraduate committee.

**242 Architectural Design II U 6**

Studio focusing upon elementary diagramming and analysis of human needs; concepts of color theory; natural lighting; historical design precedents; and horizontal and vertical movement systems.

Wi Qtr. 3 cl, 9 lab hrs. Prereq: 241 and 271. Open only to students enrolled in arch.

**243 Architectural Design III U 6**

Studio focusing upon elementary architectural programming; concepts relating human use to architectural form, space, symbol and site; site analysis; functional diagrams, matrices and charts; barrier-free design and 19- and 20th-century design precedents.

Sp Qtr. 3 cl, 9 lab hrs. Prereq: 242. Open only to students enrolled in arch.

**271 Architectural Graphics: Freehand Drawing for Architects U 3**

Fundamental freehand drawing principles necessary to the investigation, visualization, and presentation of architectural design ideas.

Au Qtr. 1 cl, 5 lab hrs. Concur: 241. GEC arts and hums VPA course.

**272 Architectural Graphics: Constructed 3-D Drawings U 3**

Study and application of graphic theory and techniques such as axonometrics, perspectives, and shades and shadows.

1 cl, 5 lab hrs. Prereq: 271 or permission of instructor.

**273 Architectural Presentation Techniques U 3**

Study and application of architectural presentation techniques in pencil, ink, and other media.

1 cl, 5 lab hrs. Prereq: 272 or permission of instructor.



**293 Individual Studies in Architecture U 1-5**

Designed for students who desire to pursue, individually, special studies in the discipline.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies in Architecture U 1-5**

Designed for students who desire to pursue, in a group, special studies in the discipline.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs.

**341 Architectural Design IV U 6**

Studio focusing upon analysis of historical and contemporary building types, graphic and verbal architectural analysis, and programmatic diagrams, matrices, etc.; human behavioral influences on architecture.

Au Qtr. 2 cl, 10 lab hrs. Prereq: 243. Concur: Arch 626. Open only to students enrolled in arch.

**342 Architectural Design V U 6**

Studio focusing upon relationship of wood and masonry material and construction to architectural design; introduction to building codes; bearing wall and post and beam structural systems.

Wi Qtr. 2 cl, 10 lab hrs. Prereq: 341. Concur: Arch 627. Open only to students enrolled in arch.

**343 Architectural Design VI U 6**

Studio focusing upon relationship of steel and concrete materials and construction to architectural design; introduction to zoning codes; skeletal and rigid frame structural systems.

Sp Qtr. 2 cl, 10 lab hrs. Prereq: 342. Open only to students enrolled in arch.

**426 Introduction to Architectural Structures U 4**

Survey of statics and strength of materials; survey of structural systems with emphasis on integrated structural behavior and selection of the best structural system.

Au Qtr. 4 cl. Prereq: Physics 111. BER/LAR/GEC course.

**441 Architectural Design VII U 6**

Studio focusing upon the relationship of buildings and site; site analysis; alternative energy and passive solar design; computer-aided design.

Au Qtr. 1 cl, 10 lab hrs. Prereq: 343. Open only to students enrolled in arch.

**442 Architectural Design VIII U 6**

Studio focusing upon application of human behavioral analysis techniques to architectural design; programming; post occupancy evaluation.

Wi Qtr. 1 cl, 10 lab hrs. Prereq: 441 or permission of Undergrad Committee. Open only to students enrolled in arch.

**443 Architectural Design IX U 6**

Studio focusing upon relationship of mechanical systems, life cycle costing, value engineering and project financial feasibility to architectural design.

Sp Qtr. 1 cl, 10 lab hrs. Prereq: 442 or permission of the Undergrad Committee. Open only to students enrolled in arch.

**H444 Special Honors Design Studies U 6**

Studio for group and/or individual design studies.

Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing in arch with a minimum cumulative pt-hr ratio of 3.20, permission of instructor and Dept Honors Committee. Accepted students may substitute this course for 441, 442, or 443.

**600 History of Ancient and Medieval Architecture U G 3**

Survey of history of architecture of Mesopotamia, Egypt, Greece, and Rome; includes early Christian, Byzantine, Romanesque, and Gothic periods; includes historical inquiry, physical, and cultural influences, theories, and analysis techniques.

3 1-hr lec, 1 1-hr rec. H600 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 301 and 302. Open to majors and non-majors.

**601 History of Renaissance and Baroque Architecture U G 3**

Survey of history of architecture of Renaissance, Mannerist, and Baroque periods; includes historical inquiry, physical and cultural influences, theories, and analysis techniques.

3 cl. H601 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 303. Open to majors and non-majors.

**602 History of Enlightenment and 19th-Century Architecture U G 3**

Survey of history of Enlightenment and 19th-Century architecture; includes historical inquiry, physical and cultural influences, theories, and analysis techniques.

3 cl. H602 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 304. Open to majors and non-majors.

**603 History of Modern Architecture U G 3**

Survey of history of modern architecture, includes historical inquiry, physical, and cultural influences, theories, and analysis techniques.

3 cl. H603 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 305. Open to majors and non-majors.

**604 History and Preservation of 19th- and 20th-Century American Architecture U G 3**

Investigation of 19th- and 20th-century American architecture with emphasis upon issues of preservation and conservation.

3 cl. Prereq: Grad standing or 4th yr standing in arch or permission of instructor.

**605 Research Methods in Architectural History and Preservation U G 3**

A survey of literary and physical research techniques in architectural history and preservation; identification and recording of historic buildings; field work in inventory techniques.

3 cl. Prereq: Grad standing or 4th yr standing in arch or permission of instructor.

**606 Architectural Preservation: Administration and Practice U G 3**

An outline of regulations, laws, economic incentives, funding sources, and technical/design guidelines as they affect architectural preservation.

3 cl. Prereq: 4th yr standing or grad standing in arch or permission of instructor.

**609 Evolution of the English Architectural Environment U G 3**

Survey of the development of the English architecture in response to the physical characteristics of the island and the changing social, political, and economic context.

3 cl. Not open to students with credit for 309. Open to majors and non-majors.

**610 Survey of Architectural Theory U G 3**

Survey of architectural theory which reviews the history of architecture while searching for reinterpretations, strategies, structures, and precedents for theory in Western intellectual history.

3 cl. Prereq: 301, 302, 303, 304, 305, or 600, 601, 602, and 603; or permission of instructor. Not open to students with credit for 401.

**616 Introduction to Architectural Structures G 3**

Survey of statics and strength of materials; survey of structural systems with emphasis on integrated structural behavior and selection of best structural systems.

Au Qtr. 2 2-hr cl. Open only to students in 3+ Master of Architecture Program.

**617 Wood and Steel Structure U G 3**

Principles, elements, computations, detailing, and connections for structural wood and steel.

Wi Qtr. 3 cl. Prereq: 426 or 616. Not open to students with credit for 427.

**618 Masonry and Concrete Structure U G 3**

Principles, elements, computations, detailing, and connections for structural masonry and concrete.

Sp Qtr. 3 cl. Prereq: 427 or 618. Not open to students with credit for 428.

**626 Introduction to Building Construction U G 3**

Introduction to construction materials and building systems; survey of building industry and its relation to architectural practice.

Au Qtr. 3 cl, 2 hrs lab. Prereq: Jr standing or permission of instructor. Concur: 341 (U only). Not open to students with credit for 326.

**627 Building Construction I U G 3**

Detailing of building sections, simple enclosures and structural assemblies emphasizing wood and steel construction.

Wi Qtr. 3 cl, 2 hrs lab. Prereq: 326 or 626. Concur: 342 (U only). Not open to students with credit for 327.

**628 Building Construction II U G 3**

Detailing of building sections, simple enclosures, and structural assemblies emphasizing masonry and concrete construction.

Sp Qtr. 3 cl, 2 hrs lab. Prereq: 327 or 627. Not open to students with credit for 328.

**630 Computer Graphics for Architectural Design U G 3**

Introduction to computer-aided architectural design for studio uses; theory of architectural modeling and application using commercially available software.

1 2-hr cl, 1 2-hr lab. Prereq: Admission to School of Architecture Program. Not open to students with credit for 371.

**641 Accelerated Architectural Design I U G 6**

Architectural analysis and problem solving for students in the 3+ Architecture Graduate Program.

Au Qtr. Prereq: Admission to the 3+ Master of Architecture Program.

**642 Accelerated Architectural Design II U G 6**

Continuation of 641.

Wi Qtr. Prereq: 641. Open only to students in the 3+ Master of Architecture Graduate Program.

**643 Accelerated Architectural Design III U G 6**

Continuation of 642.

Sp Qtr. Prereq: 642. Open only to students in the 3+ Master of Architecture Graduate Program.

**660 Computer-Aided Architectural Design and Graphics**

Usage and development of computer graphics techniques in two and three dimensions as they apply to architectural drafting and design.

**660.01 Two-Dimensional Computer-Aided Architectural Design and Graphics U G 4**

Two dimensional vector graphics oriented programming with emphasis on parameterization techniques and transformational operators applicable to architectural design and drafting.

2 2-hr cl. Prereq: 294A or 371 or En Graph 294A or 630 or enrollment in grad program or permission of instructor.

**660.02 Three-Dimensional Computer-Aided Architectural Design and Graphics U G 4**

Three dimensional graphics oriented programming with emphasis on parameterization/transformations as they apply to derivation and perspective drafting of architectural compositions.

2 2-hr cl. Prereq: 660.01 or equiv and permission of instructor.

**660.03 Integrated Computer Aids for Architectural Design U G 4**

Color graphics and texture, sculpting operators, spatial grammars, and data structures as they apply to architectural design.

2 2-hr cl. Prereq: 660.02 or equiv and permission of instructor.

**661 Architectural Environmental Systems U G 3**

Survey of building energy sources, climate and site, energy and arch design, environmental comfort, heat loss and gain, plumbing and storm water systems, lighting fundamentals, and light sources.

Au Qtr. 3 cl. Prereq: Physics 112, enrollment in Graduate School, or permission of instructor. Not open to students with credit for 461.

**662 Electrical Systems in Architecture U G 3**

Survey of daylight design, lighting design and application, principles of electricity, electrical systems and materials, service and utilization, and electric wiring design.

Wi Qtr. 3 cl. Prereq: 661 or equiv.

**663 Mechanical Systems in Architecture U G 3**

Survey of heating, cooling, and ventilation; environmental planning; climate control systems; solar energy; energy conservation; fire protection; acoustics; noise control and building signal and life-safety systems.

Sp Qtr. 3 cl. Prereq: 661.

**671 Social and Psychological Influences on Architecture U G 3**

Survey of the relationships between human-made surroundings and selected social/psychological processes basic to human functions; the application of this material to programming, design, and evaluations of settings for human use.

3 cl. Prereq: Arch 3rd yr standing or above.

**672 Economic Influences on Architecture U G 3**

Survey of economic issues and methods relevant to practice of architecture including the building delivery systems, market analysis, computation of present, future and annual worth; life cycle costing, depreciation, and tax implications.

3 cl. Prereq: Arch 3rd yr standing or above.

**693 Individual Studies in Architecture U G 1-5**

For students majoring in arch desiring to pursue special studies not offered in the fixed curriculum.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor and completion of dept independent study form. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies in Architecture U G 1-5**

For students majoring in arch desiring to pursue special studies not offered in the fixed curriculum.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor and completion of dept independent study form. Repeatable to a maximum of 15 cr hrs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**700 Allied Arts U G 3**

Analysis of arts related to architecture and the expression of the nature of materials in architectural ornament, furniture and furnishings, and the garden.

3 cl. Prereq: Arch 4th yr or grad standing in arch or permission of instructor.

**701 History of Architectural Theory U G 3**

Survey of architectural theories as stated by architects, historians, and architectural critics.

3 cl. Prereq: Arch 4th yr standing or permission of instructor.

**724 Structural Design in Architecture U G 3**

Analysis and design of structural elements and systems; emphasis on integration of structures and building design.

3 cl. Prereq: 428 or 618 or permission of instructor.

**751 Practice of the Design Professions I U G 3**

History of professions and their clients; the professional's interaction with society and government substantive aspects of practice, including organization and communication; legal aspects of construction.

Au Qtr. 3 cl. Prereq: Grad standing in arch or permission of instructor.

**752 Practice of the Design Professions II U G 3**

Management of construction contracts; bonds and insurance operational procedures during negotiation and construction phases; arbitration; office and project case studies.

Sp Qtr. 3 cl. Prereq: Grad standing in arch or permission of instructor.

**H783 Honors Research U 3**

Research and investigation for each student with individual conferences resulting in a proposal, objectives, bibliography, and other research.

Arr. Prereq: 4th yr standing in arch with a minimum cumulative pt-hr ratio of 3.20, permission of instructor and Dept Honors Committee. This course is graded S/U.

**H784 Honors Project U 6**

Development and promulgation of an honors project as proposed in H783.

Arr. Prereq: H783, 4th yr standing in arch with a minimum cumulative pt-hr ratio of 3.20, permission of instructor and Dept Honors Committee. Accepted students may substitute this course for 443. Completion and acceptance of the project is required for graduation with distinction in BS Arch.

**801 Architectural Theory: Criticism G 3**

Investigations in architectural criticism and strategies for interpreting buildings.

Au Qtr. 3 cl. Prereq: Grad standing in arch; concur: 841.

**802 Architectural Theory: Investigation of Context G 3**

Investigations of architecture and its physical context.

Wi Qtr. 3 cl. Prereq: Grad standing in arch; concur: 842.

**803 Architectural Theory Seminar**

Investigations of Contemporary Architectural Theory.

Prereq: 802. Students select two of the following decimal subdivisions.

**803.01 Architectural Issues I G 3**

Repeatable to a maximum of 6 cr hrs.

**803.02 Architectural Issues II G 3**

Repeatable to a maximum of 6 cr hrs.

**803.03 Architectural Issues III G 3**

Repeatable to a maximum of 6 cr hrs.

**803.04 Architectural Issues IV G 3**

Repeatable to a maximum of 6 cr hrs.

**810 Baumer Publications Seminar G 6**

Focus on design and publication of material derived from visits of the Baumer Distinguished Visiting Professor, review of raw documents, presentation of graphic design strategies.

Sp Qtr. 1 4-hr cl. Prereq: Permission of Graduate Studies Committee and 6th yr grad standing.

**841 Advanced Architectural Design I G 6**

Studio focusing on coordination and integration of material presented in the undergraduate design sequence with specific implementation of a comprehensive approach to building design.

Au Qtr. 8 lab hrs. Concur: 801.

**842 Advanced Architectural Design II G 6**

Continuation of 841.

Wi Qtr. 8 lab hrs. Concur: 802.

**844 Architectural Studio Options**

Creative exploration of architectural design through studios taught by distinguished visiting critics and faculty members.

Su, Au, Wi, Sp Qtrs. 8 lab hrs. Prereq: 802 and 842. Students select four of the following decimal subdivisions.

**844.01 Advanced Design I G 6**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs.

**844.02 Advanced Design II G 6**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs.

**844.03 Advanced Design III G 6**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs.

**844.04 Advanced Design IV G 6**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs. This is a Progress course. A letter grade will be assigned two qtrs after completion of course.

**893 Individual Studies in Architecture G 1-6**

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in arch, permission of instructor, and completion of dept independent study form. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**894 Group Studies in Architecture G 1-6**

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in arch, permission of instructor. Repeatable to a maximum of 18 cr hrs.

**899 Interdepartmental Seminar G 1-5**

See Interdepartmental Seminars.

Su, Au, Wi, Sp Qtrs.

**999 Research in Architecture G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Art

146 Hopkins Hall, 128 North Oval Mall, 292-5072

**162 Concepts and Issues in Art U 2**

An orientation for new art students and a survey of art making with an emphasis on contemporary works.

Au, Sp Qtrs. 2 cl.

**170 Beginning Drawing U 5**

An introduction to basic freehand drawing, exploration of a range of drawing methods, media, concepts; emphasis on drawing from observation.

Su, Au, Wi, Sp Qtrs. 1 cl, 5 2-hr labs. This course is available for EM credit. GEC arts and hums VPA course. VPA Admis Cond course.

**172 Visual Studies: Two Dimensional Art U 5**

Basic concepts of two-dimensional art dealing with visual structure, process, content, and invention.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs. This course is available for EM credit. GEC arts and hums VPA course. VPA Admis Cond course.

**182 Visual Studies: Three-Dimensional Art U 5**

Basic concepts of three-dimensional art dealing with the organization of space and form, using a variety of materials, processes, tools.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs. Prereq or concur: 172. This course is available for EM credit.

**201 Introduction to Photography U 5**

Introduction to photographic theory, practice, and aesthetics through color slides and black and white image production and critique.

3 2-hr cl. Not open to students with credit for 203 or Photog 201 or 203. Students must supply 35 mm adjustable camera, color and black and white film, black and white paper, and slide carousel. GEC arts and hums VPA course. VPA Admis Cond course.

**230 Introduction to Molten Glassworking U 5**

Introduction to glass as a fluid material for artistic expression; emphasis on the development of original imagery made from molten glass.

Au, Wi, Sp Qtrs. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**231 Beginning Cold Glassworking U 5**

Exploration of contemporary possibilities for the visual imagery of preformed glass using traditional techniques as a departure point; emphasis on innovative approaches.

VPA Admis Cond course.

**240 Fundamentals of Ceramic Art: Handforming U 5**

Introduction to the art phases of the ceramic field; laboratory practice in the hand forming process.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. GEC arts and hums VPA course. VPA Admis Cond course.

**242 Fundamentals of Ceramic Art: Wheel U 5**

Introduction to the ceramic arts through the use of the potter's wheel with lectures covering a broad survey of the field of ceramics.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. VPA Admis Cond course.

**260 Visual Studies: Real Time and Recorded Time Arts U 3**

Introduction to basic concepts of real time and recorded time-based artworks using a variety of processes and media.

Au, Wi, Sp Qtrs. 3 2-hr labs. Prereq: 170, 172, and 182.

**270 Beginning Life Drawing U 5**

Drawing from the human figure; discussion of drawing as related to significant traditions; lectures and demonstrations.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 170 and 172. Not open to students with credit for 272. This course is available for EM credit.

**273 Painting I U 5**

Introductory painting emphasizing fundamentals and their utilization as a basis for individual development; student initially works from still life; subsequent projects increase in complexity.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 270 or 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor. This course is available for EM credit.

**278 Beginning Sculpture U 5**

An introduction to the principles of sculpture, emphasizing basic forming processes and materials.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 172, and 182; or permission of instructor. Not open to students with credit for 180. This course is available for EM credit. VPA Admis Cond course.

**293 Individual Studies**

Preliminary studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**293.09^ Drawing U 2-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**293.10^ Painting U 2-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**294^ Group Studies U 1-5**

Group studies for students in specialized programs.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**301 Photography II U 5**

Second level production course in black and white photography emphasizing technical and aesthetic explorations commenced in 201.

Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: 201. Not open to students with credit for 403 or Photog 521.

**340 Intermediate Ceramic Art: Handforming U 5**

Studio practice in designing ceramic wares with emphasis on the hand forming processes.

Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 240. Not open to students with credit for 245.

**342 Intermediate Ceramic Art: Wheel U 5**

Intermediate course utilizing potter's wheel as forming process.

Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 242. Not open to students with credit for 244.

**370 Intermediate Drawing U 5**

Intermediate level drawing experience focusing on drawing from observation, exploration of materials and processes and the use of color.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 182, 260, and 270; and Hist Art 210 or 211 or 212; or equivs with permission of instructor. Not open to students with credit for 274.

**372 Visual Studies: Color U 5**

An introduction to seeing and using color for all disciplines; projects deal with color organization, phenomena, and interaction.

Au, Wi, Sp Qtrs. 5 2-hr labs. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**373 Painting II U 5**

A continuation of 273 emphasizing technical and conceptual fundamentals of painting from observation and abstraction with a focus in spatial relationships in painting.

Su, Au, Wi, Sp Qtrs. 3 2-hr labs, 9 hrs arr. Prereq: 273, 370, and 372.

**376 Beginning Relief Printmaking U 5**

Introduction to the practice and examination of several modes of artistic expression in the relief processes of printmaking.

Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**377 Beginning Serigraphy U 5**

Introduction to the practice and examination of several modes of artistic expression in the serigraphic processes of printmaking.

Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**378 Beginning Intaglio Printmaking U 5**

Introduction to practice and examination of several modes of artistic expression in the intaglio processes of printmaking.

Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**379 Beginning Lithography U 5**

Introduction to the practice and examination of several modes of artistic expression in the lithographic processes of printmaking.

Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**380 Construction Sculpture U 5**

Exploration of a range of technical and conceptual concerns of sculpture, using wood as a primary material.

Sp Qtr. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 278; and Hist Art 210 or 211 or 212; or equivs with permission of instructor. Not open to students with credit for 280.

**381 Metal Fabrication U 5**

Introduction to metal fabrication, including casting, forging, and other processes.

Au, Wi Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, and 278; and Hist Art 210 or 211 or 212; or equivs with permission of instructor. Not open to students with credit for 281.

**382 Life Sculpture U 5**

Aspects of the human form studied in relation to the materials of sculpture; experimentation in a choice of materials: clay, wax, cement, and plaster.

Au, Wi Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 272, and 278; and Hist Art 210 or 211 or 212; or equivs with permission of instructor. Not open to students with credit for 282.

**401 Photography III U 5**

Third-level production course in black and white photography with emphasis in creative explorations including manipulations, through a sustained body of work.

Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: 301 or 403. Not open to students with credit for 503.

**450 Digital Image Manipulation I U 5**

Introduction to creating and manipulating graphic images on Macintosh using Photoshop, Painter; includes input/output of student work as applies to art students.

Au, Wi, Sp Qtrs. 2 3-hr cl/lab.

**451 Multimedia Authoring U 5**

Introductory integration to various electronic media, graphics, audio and video authoring systems; technical and aesthetic concepts of individual components emphasized.

Au, Wi, Sp Qtrs. 5 lec/demo hrs, 5 lab hrs. Prereq: 450 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**452 3D Computer Sculpture U 5**

Study of concepts, aesthetics, procedures, and practice of sculpting on the computer.

Au, Wi, Sp Qtrs. 6 lec hrs, 4 lab hrs. Prereq: 450 and permission of instructor.

**455 Holography I U 5**

Explorations of three-dimensional laser holography as an artistic tool in art and science, through lectures, labs, demonstrations and critiques, students create and display holograms.

Au, Wi, Sp Qtrs. 5 lec/demo hrs, 5 lab hrs. Repeatable to a maximum of 15 cr hrs.

**524 Large Format Photography U G 5**

Advanced still photography course dealing with the mechanics, aesthetics, and psychology of large format photography.

Sp Qtr. 3 2-hr cl. Prereq: 401 or 503, and written permission of instructor. Not open to students with credit for Photog 524. Student must supply 4 x 5 format film.

**531 Color Printing U G 5**

Introduction to color negative printing, its history, and current aesthetic issues surrounding work in color photography.

Au Qtr. 3 2-hr cl. Prereq: 401 or 503, and written permission of instructor. Not open to students with credit for Photog 531. Film processing supplied by student.

**550 Digital Image Manipulation II U 5**

Advanced creation and manipulation of graphic images on Macintosh computers as it applies to art students.

Au, Wi, Sp Qtrs. 2 3-hr cl/labs. Prereq: 450 and 452, and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**551 New Media U 5**

Approaches to new media projected imagery, digital control of objects and sound in installation events; performances and exhibitions.

Au, Wi, Sp Qtrs. 5 lec/demo hrs, 5 lab hrs. Prereq: Art Educ 252 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**552 3D Computer Animation U 5**

Study of concepts, aesthetics, procedures, and practice in 3D computer animation.

Au, Wi, Sp Qtrs. 6 lec hrs, 4 cl/lab hrs. Prereq: 452 and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**555 Holography II U 5**

Expanding the students' knowledge of holographic techniques, including computer generated holography in traditional and experimental artworks.

Au, Wi, Sp Qtrs. 5 lec/demo hrs, 5 lab hrs. Prereq: 455 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**570 Multi-Level Drawing**

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 274 or 370.

**570.01 Special Topics U 5**

Special topics in intermediate to advanced drawing materials and processes for personal expression with emphasis on development of analytical and critical skills.

**570.02 Life Drawing Studio U 5**

Intermediate to advanced level course focusing on issues of the figure.

**573 Multi-Level Painting U 5**

Intermediate painting; traditional subject matter such as figures, still lifes, and concepts relative to contemporary directions in painting.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 373. Repeatable to a maximum of 10 cr hrs.

**587 Third Year Sculpture Class**

Advanced study of sculptural processes, techniques, and concepts.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 280, 281, and 282. Open only to sculpture majors.

**587.01 Part 1 U 5****587.02 Part 2 U 5**

Prereq: 587.01.

**587.03 Part 3 U 5**

Prereq: 587.02.

**589 Undergraduate Internship U 3,5**

Planned field, teaching, curatorial, or lab experience under academic and professional supervision.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Art majors with photog emphasis, jr standing or above, and permission of instructor. Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in Photog 591. Interns may receive no monetary compensation.

**591 Studio Practice I**

Intermediate studio practice, following and continuing the basic program of courses undertaken in the first two years.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. The following decimal subdivisions, with the exception of 591.12, are open only to jrs and srs majoring in art.

**591.03 Ceramics U 2-5**

Repeatable to a maximum of 20 cr hrs.

**591.04 Glass U 2-5**

Repeatable to a maximum of 20 cr hrs.

**591.06 Printmaking U 2-5**

Repeatable to a maximum of 20 cr hrs.

**591.11 Sculpture U 2-5**

Repeatable to a maximum of 20 cr hrs.

**591.12 Art and Technology U 2-5**

Repeatable to a maximum of 20 cr hrs.

**595 Undergraduate Seminar in Studio Art U 3**

Presentations of studio work by seminar students, faculty, and visiting artists, with selected readings; accompanied by critical discussion emphasizing contemporary issues.

Wi Qtr. 1 3-hr cl. Prereq: Jr or sr standing in art or permission of instructor. GEC third writing course.

**630 Intermediate Molten Glassmaking U G 5**

Molten glass as an artist's material; emphasis on the evolution of a personal aesthetic through series studies.

Au, Wi, Sp Qtrs. Prereq: 230.

**631 Intermediate Cold Glassworking U G 5**

Innovational approach in fabricated glass imagery; emphasis on the growth of artistic development through series studies.

Au, Wi, Sp Qtrs. Prereq: 231.

**635 Photographic Criticism U G 3**

Reading, lectures, and discussions dealing with the study and practice of photographic criticism to facilitate and enrich the understanding and criticism of photography.

Wi Qtr. 2 2-hr cl. Prereq: 403 or 636 or Art Ed 604 or written permission of instructor. Not open to students with credit for Art Ed 635 or Photog 635. Cross-listed in Art Education.

**640 Kiln Building U G 5**

Design, construction, and use of simple gas and electric ceramic studio kilns; practice in the various types and methods of firing.

Sp Qtr. 5 2-hr labs, 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor.

**641 Mold Making U G 5**

Studies in the designing, fabrication, and uses of models and molds in such multiple ceramic production processes as casting, jiggering, and pressing.

Wi Qtr. 5 2-hr labs, 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor.

**642 Monumental Building Techniques U G 5**

Design and construction of large ceramic art forms.

Au Qtr. 5 2-hr labs, 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor.

**644 Ceramic Glaze and Technology U G 5**

Ceramic computations for art students; methods of representing ceramic composition; laboratory study and discussion of raw materials and their uses in bodies and glazes.

Sp Qtr. 5 2-hr cl. 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor. Not open to students with credit for 441.

**645 Advanced Special Projects U G 5**

Advanced work developed in consultation with and under the close supervision of the instructor.

Au, Wi, Sp Qtrs. 3 3-hr labs, 6 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**647 Ceramic Art History U G 5**

Slide lectures; designed specifically to give the student potter an understanding of historical forms and technical processes; presented in chronological sequence.

Sp Qtr. 3 2-hr cl. Prereq: 240, 242, 340, and 342; or permission of instructor.

**661 Art and Technology**

A creative and conceptual multimedia exploration of the various aspects of reflection, situation art, and space; introduction of alternatives in medium, technique, and product.

Prereq: Permission of instructor.

**661.01 Aspects of Art and Technology I U G 5**

Au Qtr. 6 studio hrs, 4 hrs arr.

**661.02 Aspects of Art and Technology II U G 5**

Wi Qtr. 6 studio hrs, 4 hrs arr.

**661.03 Aspects of Art and Technology III U G 5**

Sp Qtr. 6 studio hrs, 4 hrs arr.

**670 Advanced Drawing I U G 5**

Special problems in drawing, utilizing a wide range of media and methods and exploring a variety of materials in experimental approaches to drawing.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 274. Repeatable to a maximum of 20 cr hrs.

**673 Advanced Painting**

Su, Au, Wi, Sp Qtrs. 3 2-hr labs, 9 hrs arr. Prereq: 573. Not open to students with 20 cr hrs in 673.

**673.01 Special Topics U G 5**

Special topics in painting with a wide emphasis upon current directions, new media, and techniques; lectures, discussions, and field trips.

Repeatable to a maximum of 20 cr hrs.

**673.02 Visiting Artists U G 5**

A visiting artist will lead selected research problems in painting; lectures, discussions, and field trips.

Repeatable to a maximum of 20 cr hrs.

**673.03 Special Problems in Abstraction U G 5**

Research problems in abstract painting with a wide emphasis upon abstract and/or non-representational painting; lectures, discussions, and field trips.

Repeatable to a maximum of 20 cr hrs.

**673.04 Special Problems in Landscape U G 5**

Research problems in landscape painting with a wide emphasis upon the environment as source material for painting; lectures, discussions, and field trips.

Repeatable to a maximum of 20 cr hrs.

**673.05 Special Problems in the Figure U G 5**

Research problems in figure painting using life and clothed models; advanced problems using figure groups, lectures, discussions, and field trips.

Repeatable to a maximum of 20 cr hrs.

**673.06 Special Problems in Painting: Conceptual Approaches U G 5**

Conceptual and theoretical approaches to painting will be emphasized; lectures, discussions, and field trips.

Repeatable to a maximum of 20 cr hrs.

**675 Photomechanical Printmaking U G 5**

Intensive exploration of photomechanical reproduction technology utilized by the printing industry and the aesthetic of the photographic image as a tool for the art student.

Wi, Sp Qtrs. 2 2.5-hr labs, 7 hrs arr. Prereq: 377 or 378 or 379, and written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**676 Advanced Relief Printmaking U G 5**

An intensive exploration of the relief processes as a means for individual expression.

Au, Wi Qtrs. 2 3-hr labs, 7 hrs arr. Prereq: 377 or 378 or 379 or written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**677 Advanced Serigraphy U G 5**

An intensive exploration of the serigraphic processes as a means for individual expression.

Au, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 377 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**678 Advanced Intaglio U G 5**

An intensive exploration of the intaglio process as a means for individual expression.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 378 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**679 Advanced Lithography U G 5**

An intensive exploration of the lithographic processes as a means for individual expression.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 379 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**687 Fourth Year Sculpture Class**

Study of sculptural processes, concepts, and self analysis as an artist.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 587.03. Open only to students specializing in sculpture.

**687.01 Part 1 U 5****687.02 Part 2 U 5**

Prereq: 687.01.

**687.03 Part 3 U 5**

Prereq: 687.02.

**690 Imagemakers' Seminar U G 3,5**

Advanced group investigation of individual photographic projects with weekly critique sessions.

Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: 25 hrs of photography course work and permission of instructor. Repeatable to a maximum of 20 cr hrs.

**691 Studio Practice II**

Advanced studio practice beyond 591.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. The following decimal subdivisions, with the exception of 691.12, are open only to srs or grad students majoring in art.

**691.03 Ceramics U G 2-5**

Repeatable to a maximum of 20 cr hrs.

**691.04 Glass U G 2-5**

Repeatable to a maximum of 20 cr hrs.

**691.05 Photography U G 2-5**

Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. Including cr hrs earned in Photog 691.

**691.06 Printmaking U G 2-5**

Repeatable to a maximum of 20 cr hrs.

**691.09 Drawing U G 2-5**

Prereq: Grad standing or 10 cr hrs of 673, and submission of 10-15 drawings/paintings on Advising Day previous to the intended qtr of study; open only to students with successful review by the area faculty and a completed, signed ISA form. Repeatable to a maximum of 20 cr hrs.

**691.10 Painting U G 2-5**

Prereq: 670 or grad standing, and submission of 10-15 drawings/paintings on Advising Day previous to the intended qtr of study; open only to students with a successful review by the area faculty and a completed, signed ISA form. Repeatable to a maximum of 20 cr hrs.

**691.11 Sculpture U G 2-5**

Repeatable to a maximum of 20 cr hrs.

**691.12 Art and Technology U G 2-5**

Repeatable to a maximum of 20 cr hrs.

**691.13 Art Critical Practices U G 2-5**

Advanced studio practice in art critical practices area; work developed through sustained contact with independent study adviser chosen from ACP faculty and adjunct faculty.

Repeatable to a maximum of 20 cr hrs.

**693 Individual Studies**

Advanced study for students in specialized programs.

Prereq: Permission of instructor.

**693.05 Photography U G 2-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**693.10 Painting U G 2-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**693.11 Sculpture U G 2-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**693.12 Art and Technology U G 2-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**694.01 General U G 2-5**

Repeatable to a maximum of 15 cr hrs.

**694.03 Ceramics U G 2-5**

Repeatable to a maximum of 15 cr hrs.

**694.05 Photography U G 2-5**

Repeatable to a maximum of 15 cr hrs.

**694.06 Printmaking U G 2-5**

Repeatable to a maximum of 15 cr hrs.

**694.09 Drawing U G 2-5**

Repeatable to a maximum of 15 cr hrs.

**694.10 Painting U G 2-5**

Repeatable to a maximum of 15 cr hrs.

**694.11 Sculpture U G 2-5**

Repeatable to a maximum of 15 cr hrs.

**694.12 Art and Technology U G 2-5**

Repeatable to a maximum of 15 cr hrs.

**695 Topics in Photographic Production**

Selected topics in photographic production, including formal lectures and demonstrations pertaining to current photographic research by faculty and visiting artists; topics vary.

Au, Wi, Sp Qtrs. 3 2-hr cl.

**695.02 Zone System U G 5**

History, theory, and mechanics; application of sensitometry to black and white film; its impact on the students' personal work.

Wi Qtr. Prereq: 401 or 503, and written permission of instructor. Not open to students with credit for Photog 522.

**695.03 Studio Work and Studio Lighting U G 5**

Introduction to lighting equipment, principles, and techniques as applied to constructed/directed photography done predominantly in the studio environment.

Wi Qtr. Prereq: 401 or 503, and written permission of instructor. Not open to students with credit for Photog 523 or 525.

**695.04 Social/Documentary Photography U G 3,5**

Advanced production course with emphasis on the conceptual framework underpinning the documentary tradition in historical and contemporary photography.

Sp Qtr. Prereq: 401 or 503, and written permission of instructor. Not open to students with credit for Photog 695.04.

**695.05 Bookmaking U G 3,5**

Exploration of the history and aesthetics of photographic books with emphasis on structure, image sequence, and the relationship of images and text.

Au Qtr. Prereq: 401 or 503, and written permission of instructor.

**695.06 Alternative Processes U G 3,5**

Advanced production and study of alternative processes in photography through the production of a cohesive body of work.

Au Qtr. Prereq: 524, 695.02, and written permission of instructor. Not open to students with credit for Photog 695.07.

**695.08 Alternative Photographic Systems U G 3,5**

Advanced production course exploring alternative imaging systems such as: pinhole cameras, inexpensive plastic cameras, polaroid cameras, etc.

Sp Qtr. Prereq: 401 or 503, and written permission of instructor. Student will make or supply alternate imaging system or camera.

**695.09 Special Topics U G 3,5**

Open topic that takes into consideration the research interests of current faculty or visiting artists.

Wi Qtr. Prereq: 401 or 503, and written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**696 Senior Exhibition U 2**

Required exhibition of studio work by seniors in BFA programs, accompanied by development of a portfolio of work and an artist's statement; independent study tutorial.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Jr or sr standing in art or permission of instructor. Normally to be taken within the final two qtrs of study. GEC third writing course.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**H783 Honors Research U 3-5**

A research investigation resulting in a senior honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a 3.30 CPHR in an art specialization, permission of instructor under whose supervision the work is to be completed, and the College of the Arts Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**891 Studio Practice III**

Graduate-level studio practice.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in art or permission of instructor.

**891.03 Ceramics G 2-5**

Repeatable to a maximum of 45 cr hrs.

**891.04 Glass Art G 2-5**

Repeatable to a maximum of 45 cr hrs.

**891.05 Photography G 2-5**

Repeatable to a maximum of 45 cr hrs.

**891.06 Printmaking G 2-5**

Repeatable to a maximum of 45 cr hrs.

**891.09 Drawing G 2-5**

Repeatable to a maximum of 45 cr hrs.

**891.10 Painting G 2-5**

Repeatable to a maximum of 45 cr hrs.

**891.11 Sculpture G 2-5**

Repeatable to a maximum of 45 cr hrs.

**891.12 Art and Technology G 2-5**

Repeatable to a maximum of 45 cr hrs.

**891.13 Art Critical Practices G 2-5**

Advanced studio practice in art critical practices area; work developed through sustained contact with independent study adviser chosen from ACP faculty and adjunct faculty.

Repeatable to a maximum of 45 cr hrs.

**893 Individual Studies**

Su, Au, Wi, Sp Qtrs.

**893.03 Ceramics G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**893.05 Photography G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**893.06 Printmaking G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**893.10 Painting G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**893.11 Sculpture G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**893.12 Art and Technology G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**894 Group Studies**

Group studies for students in specialized programs.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

**894.03 Ceramics G 1-5**

Repeatable to a maximum of 15 cr hrs.

**894.05 Photography G 1-5**

Repeatable to a maximum of 15 cr hrs.

**894.06 Printmaking G 1-5**

Repeatable to a maximum of 15 cr hrs.

**894.10 Painting G 1-5**

Repeatable to a maximum of 15 cr hrs.

**894.11 Sculpture G 1-5**

Repeatable to a maximum of 15 cr hrs.

**894.12 Art and Technology G 1-5**

Repeatable to a maximum of 15 cr hrs.

**895 Seminar in Studio Art G 2**

Presentations by students, faculty, and visiting artists, with critical discussion emphasizing contemporary issues.

Au, Wi Qtrs. 1 2-hr cl. Prereq: Grad standing. Repeatable to a maximum of 8 cr hrs.

**896 Graduate Teaching Seminar G 2**

Exercises and discussions exploring techniques used in organizing, presenting, and evaluating materials taught in studio art classes with special reference to the Foundation Program.

Au Qtr. 1 2-hr cl. Prereq: Permission of instructor and grad standing in studio art.

**991 Studio Practice IV**

Advanced graduate studio practice.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in art or permission of instructor.

**991.03 Ceramics G 2-5**

Repeatable to a maximum of 45 cr hrs.

**991.04 Glass Art G 2-5**

Repeatable to a maximum of 45 cr hrs.

**991.05 Photography G 2-5**

Repeatable to a maximum of 45 cr hrs.

**991.06 Printmaking G 2-5**

Repeatable to a maximum of 45 cr hrs.

**991.09 Drawing G 2-5**

Repeatable to a maximum of 45 cr hrs.

**991.10 Painting G 2-5**

Repeatable to a maximum of 45 cr hrs.

**991.11 Sculpture G 2-5**

Repeatable to a maximum of 45 cr hrs.

**991.12 Art and Technology G 2-5**

Repeatable to a maximum of 45 cr hrs.

**991.13 Art Critical Practices G 2-5**

Advanced studio practice in art critical practices area; work developed through sustained contact with independent study adviser chosen from ACP faculty and adjunct faculty.

Repeatable to a maximum of 45 cr hrs.

**999 Research in Art G 1-18**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Art Education

258 Hopkins Hall, 128 North Oval Mall, 292-7183

**160 Art and Music since 1945 U 5**

A survey of the visual arts and music in the western world since 1945, based on live and recorded performances and exhibitions.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl, 1 1-hr rec. Not open to students with credit for Arts Col 160. GEC arts and hums VPA course. VPA Admis Cond course.

**225 Introduction to Art Education U 5**

Ideas, issues, and career possibilities in art education explored through readings, dialogue, and site visitations.

Au, Wi Qtrs. 3 2-hr cl.

**252 Introduction to the Computer in the Visual Arts U 5**

Introductory study of computer graphics in relation to the traditional visual arts and as a distinct art form; computer will be used to produce imagery.

Au, Wi, Sp Qtrs. 2 2-hr cl, 4 lab hrs arr. Prereq: 160, Art 162 or Arts Col 160 or hist art courses which satisfy the visual and/or performing arts requirement of the GEC or permission of instructor. GEC arts and hums VPA course.

**352 Fundamental Three-Dimensional Computer Art Techniques U 5**

An introductory study of three-dimensional computer art techniques; three-dimensional still and animated imagery will be produced.

Wi, Sp Qtrs. 2 2-hr cl, 4 lab hrs arr. Prereq: 252.

**367 Second Writing Course**

Au, Wi, Sp Qtrs. 2 2.5-hr cl. Prereq: English 110 or 111 or equiv, and soph standing.

**367.01 Ethnic Arts: A Means of Intercultural Communication U 5**

A study of the artists, the artworks, and art worlds from diverse ethnic cultures in North America.

H367.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 367. GEC second writing, arts and hums VPA, and social diversity course.

**367.02 Writing Art Criticism U 5**

Writing critically about contemporary American art by a variety of artists with diverse points of view.

GEC second writing course.

**493 Individual Studies U 1-5**

Individual studies and project work in specified problems of the field of art education.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**589 Internship in Art Education U 1-15**

Students intern at non-public school sites to synthesize and apply what they have learned in the classroom through concentrated practice in the field.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Completion of all other program requirements. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**595 Seminar on Topical Issues in Art Education I U 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 120 or 500. Repeatable to a maximum of 15 cr hrs.

**600 Art for Elementary Teachers U G 3**

Problems of teaching in terms of personal knowledge about art, insight into children's art work, and understanding of elementary school curriculum.

Su, Sp Qtrs. 3 2-hr labs. Prereq: 160 or Arts Col 160 or 5 cr hrs of course work in art or art educ or hist art.

**601 Curriculum Design for Art History U G 3**

Examination of art history concepts and processes to plan K-12 school curricula.

Sp Qtr. 2 2-hr cl. Prereq: 160 or Arts Col 160, 488 or 607, and 10 cr hrs of hist art course work; or permission of instructor.

**603 History and Philosophy of Art Education U G 5**

History of the field with an emphasis on major ideas in philosophy and learning theory that affect current trends.

Au Qtr. 3 2-hr cl. Prereq: 225. Not open to students with credit for 330.

**604 Teaching of Studio Activities U G 5**

Exploration of instructional application of various art materials for educational settings.

Au Qtr. 2 3-hr labs. Prereq: 225. Not open to students with credit for 445. Open to art ed majors only.

**605 Social and Cultural Factors in Art Education U G 5**

Investigation into the role of culture, social class, gender, and age in understanding art and the diverse audiences served by art education.

Au Qtr. 3 2-hr cl. Prereq: 225. Not open to students with credit for 375.

**606 The Computer in Art Education: A Survey Course U G 5**

A survey and practical course, exploring the implications and potential of the computer in a variety of art education contexts and roles.

Wi Qtr. 2 1.5-hr cl. Prereq: 330 or 603, and 445 or 604.

**607 Concepts in Planning Art Education U G 5**

Planning for and management of the social and physical environment of art education.

Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 375 or 605. Not open to students with credit for 468.

**608 Art Education for Children with Special Needs U G 5**

Strategies that can be used in teaching art to students with special needs and lesson planning for inclusion.

Wi Qtr. 3 2-hr cl. Prereq: 375 or 605. Not open to students with credit for 588.

**635 Photographic Criticism U G 3**

Readings, lectures, and discussions dealing with the study and practice of photographic criticism to facilitate and enrich the understanding of criticism and photography.

Sp Qtr. 2 2-hr cl. Prereq: 654, or Photog 606 or 521, or permission of instructor.

**640 Critical Dialogue about Art and Aesthetics U G 5**

Theory and practice of engaging others in informed discussion of works of art.

Sp Qtr. 2 2-hr cl. Prereq: 603 or 635 or permission of instructor.

**652^ Computer Graphics in the Arts and Education U G 3**

Application of computer imaging for the arts and interactive educational programs.

Wi Qtr. 1 3-hr cl. Prereq: Sr or grad standing.



**665\*\* Content and Structure in Arts Education U G 3**

Students from art, dance, music, and theatre education engage in dialogue, research, and peer teaching focusing upon the educational content and structure of each discipline.

Sp Qtr. 1 2.5-hr cl. Open only to majors in art, dance, music, and theatre education and to grad students seeking certification. Not open to students with credit for Music 665. Cross-listed in Music.

**670 Public Policy and the Arts U G 3**

Issues in arts policymaking as they affect community arts services.

Au Qtr. 1 2.5-hr cl.

**671 Role of the Community Arts Administrator U G 3**

The administrative role in economic development, human resource development, and organizational development in the arts.

Sp Qtr. 1 2.5-hr cl, arr. Prereq: 670 or permission of instructor.

**672 Planning for Community Arts Services U G 3**

Grantsmanship, fundraising, marketing, and public relations.

Wi Qtr. 1 2.5-hr cl. Prereq: 671 or permission of instructor.

**673 Issues across the Arts G 3**

A visiting lecturer series facilitates the in-depth exploration and analysis of a quarterly selection of related arts policy, programming, and funding issues.

Sp Qtr. 1 3-hr cl. Prereq: 670 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

**680\*\* Aesthetics in Art Education U G 3**

Concepts and strategies for including aesthetics in art education curricula.

Sp Qtr. 2 1.5-hr cl. Prereq: 488 or 607 or grad standing.

**688 Instructional Applications in Art G 5**

Preparation for art instruction through curriculum development, study of instructional strategies, and peer teaching.

Su Qtr. 3 2-hr cl. Prereq: 588 or 608 or equiv. Open only to art educ majors. Repeatable to a maximum of 10 cr hrs.

**689 Laboratory Field Experience G 5**

Planning, teaching, and evaluation of a unit of instruction for implementation in an art program serving the community.

Au Qtr. 1 2-hr cl, 1 6-hr lab. Prereq: 688 and permission of instructor. Open only to art educ majors. Repeatable to a maximum of 10 cr hrs.

**691 Applied Research in Art Education U G 2-5**

Studies in empirical, philosophical, curriculum, or studio problems in art education.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

**693 Individual Studies U G 1-15**

Advanced study for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor Repeatable for different study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**700 Issues in Graduate Study in Art Education G 3**

Overview of topics in thesis and dissertation research, graduate faculty research, national and international issues, and university resources and policies.

Su, Au Qtrs. 1 3-hr cl. Prereq: Grad standing. Must be taken during the first year of graduate study in the major.

**701 Seminar on Art History in Art Education G 3**

An examination of art history structures, concepts, and research methods for translation into alternative education methods for teaching art history in K-12 settings.

Sp Qtr. 1 3-hr cl. Prereq: 601 and any 500- or 600-level course in history of art; or permission of instructor.

**705 Overview of Research Methods in Art Education G 5**

Introduction to a wide range of methods applicable to art education research problems, including historical, philosophical, ethnographic, survey, experimental, and case study methods.

Au Qtr. 2 2-hr cl. Must be taken during the first year of graduate study in the major.

**720\* Philosophy of Art Education Literature Survey G 3**

Discussion of writings by art educators, aestheticians, artists, critics, and others for historical perspective on and to distinguish the nature of philosophy of art education.

Wi Qtr. 3 cl.

**731\* Evaluation in Art Education G 3-5**

Evaluation of student performance in art; informal instruments for collecting data for use in assessing programs.

Wi Qtr. 2 2-hr cl. Prereq: 807 or equiv with written permission of instructor.

**753 Aesthetics of Interactive Technology G 5**

Aesthetic and critical investigations of the impact of interactive technologies on artmaking and art education.

Au Qtr. 1 3-hr cl, 1 2-hr lab. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs.

**765\*\* Contemporary Art and Art Education G 3**

A study of recent developments in contemporary art and the implication of those developments on art education practice and curriculum design.

Au Qtr. 4 cl. Prereq: Written permission of instructor.

**767 Critical Analysis of Multicultural Art Education: Theory and Practice G 5**

Investigation and analysis of multicultural theories and issues for art education.

Au Qtr. 2 2.5-hr cl. Prereq: Permission of instructor.

**775 Social and Cultural Theories in Art and Art Education G 3**

Critical investigation of the relationships between and among artists and art worlds of various societies and cultures.

Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**H783 Honors Research U 3-5**

A program of reading and research arranged for each student, with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a pt-hr ratio of 3.50 in the major area and permission of instructor under whose supervision the work is to be completed and the Honors Committee of either the College of the Arts or the College of Education. Repeatable to a maximum of 15 cr hrs. Satisfactory completion of at least 8 cr hrs is required of candidates for an undergrad degree with distinction in art educ. This course is graded S/U.

**786 Student Teaching in Art in Elementary Schools G 15**

Field-based teaching experience at the elementary level integrating theory, research, and practice.

Au, Wi, Sp Qtrs. 40 hrs/wk on site, 1 3-hr cl. Prereq: 689. This course is graded S/U.

**787 Student Teaching in Art in Secondary Schools G 15**

Field-based teaching experience at the secondary level integrating theory, research, and practice.

Au, Wi, Sp Qtrs. 40 hrs/wk on site, 1 3-hr cl. Prereq: 689. This course is graded S/U.

**788 Teaching and Research Seminar**

Projects and discussions related to current topics and issues in the theory, research, and practice of art teaching in schools.

Wi, Sp Qtrs. 1 3-hr cl.

**788.01\* Elementary G 3**

Prereq: 705; concur: 786.

**788.02\* Secondary G 3**

Prereq: 705; concur: 787.

**795 Seminar on Topical Issues in Art Education II G 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 15 cr hrs in art educ or permission of dept. Repeatable to a maximum of 15 cr hrs.

**801 Current Perspectives in Art Education**

Au, Wi, Sp Qtrs.

**805 Empirical Problems in Art Education G 3-5**

An introduction to the language, methodology, and application of empirical research in art education; the identification and isolation of appropriate empirical problems in the field.

Wi Qtr.

**807 Curriculum Problems in Art Education G 3-5**

An examination of the functions of curricular plans as tools for transforming selected conceptions of art education into teacher and student activities in the classroom.

Wi Qtr.

**830 Seminar in the History of Art Education G 5**

Examination of interpretative perspectives in the history of art education; classification of primary and secondary sources, and their use in historical research.

Sp Qtr. 2 2.5-hr cl. Prereq or concur: 705, or permission of instructor.

**875 Social and Cultural Research Methods for Art Education G 5**

Social and culturally based research methods for studying the art of diverse groups of people.

Sp Qtr. 2 2.5-hr cl. Prereq: 705 or permission of instructor.

**889 Internship in Arts Administration G 4-16**

Supervised administrative experience within a performing or visual arts agency/organization; depending on the organization's needs, assignments may include grantwriting, fundraising, exhibition design, etc.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 16 cr hrs.

**893 Individual Studies G 1-15**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**894 Group Studies G 1-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**911 Research Problems in Art Education G 3-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs.

**998 Research in Art Education: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Art Education: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Arts and Sciences

Denney Hall, 164 West 17th Avenue, 292-6961

**100 Arts and Sciences Survey**

Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services.

Not open to students with credit for 100 or 100.02, Agr Int 100, Arts Col 100.01 or 100.02, Bio Sci 100, Engineer 100, Hum Col 100, MPS Col 100, SBS Col 100, or any decimal subdivision of Univ Col 100.

**100.01 General U 1**

H100.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. This course is graded S/U.

**100.02 Health Professions U 1**

H100.02 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. This course is graded S/U.

**101 First- or Second-Year Seminar U 1**

Seminars on varying topics taught by University faculty.

H101 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Fr or soph standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Interdisciplinary Group Studies U 1-5**

Study of special or interdisciplinary topics at an introductory level.

H294 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Open to students who meet instructor's stated prereqs. Repeatable to a maximum of 15 cr hrs.

**298 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**298.01 Domestic U 1-15**

Repeatable.

**298.02 Foreign U 1-15**

Repeatable.

**400 Career Planning Seminar**

Discussion of careers for liberal arts majors; employment trends; effective job search strategies; resumes, vitae, and cover letter preparation; graduate and professional school opportunities; interviewing techniques.

Wi, Sp Qtrs. 2 cl.

**400.01 General U 1**

H400.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq 400.01: Soph or Jr standing. H400.01: Jr standing in ASC Honors Program and permission of instructor. Not open to srs except by permission of instructor, or to Capital program students, or to students with credit for 400.02. This course is graded S/U.

**400.02 Capital Program U 1**

Prereq: Soph or Jr standing in Capital program. Not open to srs except by permission of instructor, or to students with credit for 400.01. This course is graded S/U.

**489 Professional Practice**

Su, Au, Wi, Sp Qtrs. Arr.

**489.01 Credit Cooperative Education Program U 2**

Employment through the Cooperative Education program conducted under the supervision of an ASC faculty member; midterm and comprehensive final reports required.

Prereq: Registration with the co-op education program, minimum cumulative pt-hr ratio of 2.50, soph standing or above, completion of credit co-op education agreement form with instructor under whose supervision the work is to be completed, and permission of the director of co-op education. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**489.02 Noncredit Cooperative Education Program U 0**

A cooperative education or internship assignment conducted under the supervision of the employer; monitoring and evaluation by the director of the co-op program.

Prereq: Permission of the director of the co-op education program. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

**494 Interdisciplinary Group Studies U 1-5**

Study of special or interdisciplinary topics at the upper-division level.

H494 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Jr or sr standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**496 Study at a Domestic Institution U 1-15**

An opportunity for students to study at a domestic institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as travel and subsistence costs.

## Arts, College of the

152 Hopkins Hall, 128 North Oval Mall, 292-2244

Art and Music since 1945

See Art Educ 160.

Dance and Theatre, 1945 to the Present

See Dance and Theatre 161.

**100 Arts Survey**

Academic requirements; University procedures, grading system and resources; student rights and responsibilities; overview of Arts' academic areas of study and services.

Prereq: Direct enrollment into the College of the Arts. Not open to students with credit for Arts&Sci 100 or Univ Col 100.

**100.01 Pre-Arts U 1****100.02 Arts U 1****294 Group Studies U 1-5**

Interdepartmental course involving studies in two or more areas of the visual and performing arts.

Prereq: Permission of dean. Repeatable to a maximum of 18 cr hrs.

**494 Group Studies U 1-5**

Group studies in selected interdisciplinary areas in the arts.

Arr. Prereq: Jr standing or above, and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies U G 2-5**

Advanced studies for students engaged in interdisciplinary investigations within the College of the Arts.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Interdepartmental course involving studies in two or more areas of the visual and performing arts.

Prereq: Permission of dean. Repeatable to a maximum of 18 cr hrs.

**790 Interdisciplinary Research Seminar in Computer Technology in the Arts G 5**

Interdisciplinary investigations in artmaking and industrial and instructional design through the use of computer technology.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**Astronomy**

4055 McPherson Laboratory, 140 West 18th Avenue, 292-1773

**161 Introduction to Solar System Astronomy U 5**

Physical nature of the sun and its family of planets, satellites, comets and minor bodies; gravitation, light, and telescopes.

Su, Au, Wi, Sp Qtrs. 5 cl or 3 1.5-hr cl. H161 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: For 161: Math 075 or 076 or 102, or Math Placement Level R. Prereq for H161: Math 116 or 148. Not open to students with credit for 150, 171, or 191. Not intended for ASC BS students. Not recommended for students who plan to continue in astronomy or physics. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

**162 Introduction to Stellar, Galactic, and Extragalactic Astronomy U 5**

Structure, motions, and evolution of stars, interstellar material, galaxies, and the universe as a whole.

Su, Au, Wi, Sp Qtrs. 5 cl or 3 1.5-hr cl. H162 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: For 162: 161 or 191. Prereq for H162: 161 or 191, and Math 116 or 148. Not open to students with credit for 150, 172, or 192. Not intended for ASC BS students. Not recommended for students who plan to continue in astronomy or physics. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

**H163\* Relativity and Cosmology U 5**

Origin and evolution of the Universe, based on the Theory of Relativity, including the Big Bang, cosmic microwave background, formation of cosmic structure, dark matter.

Au Qtr. 5 cl. Prereq: 162 and enrollment in an honors program; or permission of dept. GEC phys sci course.

**171 Solar System Astronomy U 5**

Development of astronomy and astrophysics; nature of the solar system, including planets, satellites, comets, asteroids, and the solar atmosphere.

Wi Qtr. 5 cl. Prereq: Math 150. Not open to students with credit for 161. GEC phys sci course.

**172 Stellar, Galactic, and Extragalactic Astronomy U 5**

Structure and evolution of stars, interstellar medium, galaxies, and the universe.

Sp Qtr. 5 cl. Prereq: 171. Not open to students with credit for 162. GEC phys sci course.

**291 Basic Astrophysics and Planetary Astronomy U 5**

Motions and physical nature of objects in the solar system; electromagnetic radiation, telescopes, and astronomical detectors.

Au Qtr. 5 cl. Prereq or concur: Physics 133; or permission of instructor. Not open to students with credit for 191. Intended only for BS students. This course is available for EM credit.

**292 Stellar, Galactic, and Extragalactic Astronomy and Astrophysics U 5**

Observational and physical properties of the sun and stars; stellar structure and evolution; interstellar medium; galaxies and cosmology.

Wi Qtr. 5 cl. Prereq: 291 or permission of instructor. Not open to students with credit for 192. This course is available for EM credit.

**294 Group Studies U 1-5**

Special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**350\* Methods of Astronomical Observation and Data Analysis U 5**

Astronomical observational techniques and quantitative analysis of astronomical data; practical experience with modern astronomical instrumentation and computer-based reduction, analysis, and interpretation of astronomical data.

Au Qtr. 3 cl, 1 2-hr lab plus independent observation. Prereq: 150 or 162 or 192 or 292, Math 153, and Physics 133. GEC data analysis course.

**640\* Stellar Astronomy U G 4**

Distances, luminosities, radii, temperatures, and masses of stars; the distribution and motion of stars; interstellar matter; and galactic dynamics.

Au Qtr. Prereq: 192 or 292, Math 254, and Physics 133; or permission of instructor. Not open to students with credit for 650.

**681\* Principles of Stellar Evolution and Nucleosynthesis U G 5**

Physics of stellar structure, evolution, and nucleosynthesis.

Wi Qtr. 5 cl. Prereq: Math 255 or 415; Physics 263; Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for 641 or 651, or Physics 681. Cross-listed in Physics.

**682\* Introduction to Cosmology U G 5**

Structure and evolution of the Universe.

Wi Qtr. 5 cl. Prereq: Math 255 or 415; Physics 263; Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for 642 or Physics 682. Cross-listed in Physics.

**693 Individual Studies U G 1-15**

Independent library or laboratory work on a special problem in observational or theoretical astronomy.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 80 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of study arranged for each student, with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the astron courses taken, with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BS with distinction in astron. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**801 Astronomy Seminar I G 2**

Seminars conducted on astronomical topics of current interest; students will participate actively in the presentation and discussion of materials.

Au Qtr. Prereq: 10 cr hrs each at 600-level or higher in astron, physics, and math; or permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**802 Astronomy Seminar II G 2**

Continuation of 801.

Wi Qtr. Prereq: 801. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**803 Astronomy Seminar III G 2**

Continuation of 802.

Sp Qtr. Prereq: 802. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**820\* Radiation Measurements G 3**

Techniques for obtaining and interpreting measurements of radiation from astronomical sources.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**822\* Electromagnetic Radiation G 3**

Continuous radiative processes of astrophysical interest.

Au Qtr. 2 1.5-hr cl. Prereq: Physics 656 or permission of instructor.

**823\* Theoretical Spectroscopy G 3**

Theory of atomic spectra, including radiative and collisional processes for line formation by atoms, ions, and molecules in plasmas.

Au Qtr. 3 cl or 2 1.5-hr cl. Prereq: Physics 532 or 632 or permission of instructor.

**825\* Radiative Gas Dynamics G 3**

Dynamics of gas flows in astrophysical situations, including stellar winds, accretion, shock waves, and jets.

Wi Qtr. 3 cl or 2 1.5-hr cl. Prereq: Physics 621 or permission of instructor.

**830\* Properties of Stars and Galaxies G 3**

Observed properties of individual stars and normal (non-active) galaxies.

Wi Qtr. 3 cl. Prereq: 640 and Physics 533 or 633 or 706, or permission of instructor.

**831\* Stellar Interiors G 3**

Theoretical aspects of the interiors and evolution of single stars.

Sp Qtr. 3 cl. Prereq: 641, Math 255 and 551, and Physics 533 or 633 or 706, or permission of instructor.

**832\* Stellar Atmospheres G 3**

Theory of the atmospheric structure of stars, emphasizing spectral line formation.

Wi Qtr. 3 cl or 2 1.5-hr cl. Prereq: 641, Math 255 and 551, and Physics 533 or 633 or 706; or permission of instructor.

**836\*\* Observed Properties of Stars G 3**

Photometric and spectroscopic observations of stars, including infrared and ultraviolet wavelengths; observations of intrinsic variable stars.

Wi Qtr. 2 1.5-hr or 3 cl. Prereq: 830 or permission of instructor.

**850 Current Topics in Astronomy G 1-5**

Staff members and visiting lecturers present material on their current research problems.

Au, Wi, Sp Qtrs. Prereq: 10 cr hrs at 600 level or higher in each of astron, physics, and math; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**868\* Galactic Astronomy G 3**

Structure and kinematics of the Galaxy.

Wi Qtr. 3 cl. Prereq: 640 and Physics 533 or 633 or 706, or permission of instructor.

**869\*\* Active Galaxies and Observational Cosmology G 3**

Properties of active galactic nuclei and quasars, the cosmological distance scale, and observational tests of cosmological models.

Sp Qtr. 3 cl or 2 1.5-hr cl. Prereq: Permission of instructor.

**870\* Stellar Systems G 3**

Dynamics and evolution of stellar systems.

Sp Qtr. 3 cl. Prereq: 868 or permission of instructor.

**871\*\* Interstellar Medium G 3**

Physical processes occurring in interstellar gas and dust.

Sp Qtr. 3 cl or 2 1.5-hr cl. Prereq: 825 or permission of instructor.

**873\* Cosmology G 3**

Structure and evolution of the Universe; physical processes in the Big Bang.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**880 Directed Research G 3**

Participation by the student in the research being conducted by a professor.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs. Repeatable only under supervision of different faculty members. This course is graded S/U.

**894 Group Studies G 1-5**

Special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

**999 Research in Astronomy and Astrophysics G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Athletic Training

School of Allied Medical Professions

516U Atwell Hall, 1583 Perry Street, 247-6231

**303 Basic Athletic Training U 5**

Basic knowledge and skills in prevention, recognition, management and rehabilitation of athletic injuries. Introduction to profession of athletic training and its governing organizations.

Su, Au, Wi, Sp Qtrs. 2.2-hr cl, 1-hr lab. Prereq: Enrollment in Athletic Training Program or permission of instructor. Demonstrates to the prospective student Athletic Trainer and/or prospective Coach what is demanded of an Athletic Trainer professionally, ethically, and medically.

**420 Injury Evaluation I U 6**

Athletic training evaluation of upper extremity injuries. Emphasis on general injury assessment techniques as well as specific assessment and pathoetiology of upper extremity injuries.

Au Qtr. 2 2-hr cl, 1-hr lab, 1-hr rec. Prereq: 303 and EEOB 232. The first in a series of 3 evaluation courses for students admitted to the athletic training major.

**421 Injury Evaluation II U 6**

Lower extremity, injury mechanisms, pathoetiology, and assessment.

Wi Qtr. 2 2-hr cl, 1-hr lab, 1-hr rec. Prereq: 420.

**422 Injury Evaluation III U 6**

Head, abdomen, spine, and thorax injury mechanisms, pathoetiology, and assessment.

Sp Qtr. 2 2-hr cl, 1-hr lab, 1-hr rec. Prereq: 421. Provides prospective student Athletic Trainers with skills needed to obtain an adequate patient history in addition to performing muscle, neurological, and special stress tests.

**430 Experience in Athletic Training I U 3**

Supervised clinical experience in the application of athletic training techniques. Focus on risk management/injury prevention and acute care of athletic injury and illness.

Wi Qtr. 3-hr clinic. Prereq: Acceptance into Athletic Training Program. Concur: 421. Clinical experiences designed to provide a thorough and comprehensive experience enabling the student to demonstrate psychomotor skills and specific applications of techniques. This course is graded S/U.

**431 Experience in Athletic Training II U 3**

Supervised clinical experience in the application of athletic training techniques. Focus on assessment and evaluation of athletic injuries.

Sp Qtr. 3-hr clinic. Prereq: Acceptance into Athletic Training Program. Concur: 422. Clinical experiences designed to provide a thorough and comprehensive experience enabling the student to demonstrate psychomotor skills and specific applications of techniques. This course is graded S/U.

**540 Athletic Training Emergency Care U 2**

First aid and emergency management of athletic injuries and illness.

Au Qtr. 1 1-hr cl, 1 1-hr lab. Prereq: 303. Designed to prepare Athletic Training students to provide on-field emergency medical care.

## Atmospheric Sciences

1036 Derby Hall, 154 North Oval Mall, 292-2514

**General Meteorology**

See Physics 503-A description of weather phenomena and the physical processes underlying them; intended primarily for nonphysics majors.

**Climatology**

See Geog 520-The elements and the controls of climate; types of climate and their distribution; climates and their effects on the economic and other activities of man.

**Microclimatology: Boundary Layer Climatology**

See Geog 622.01-Theory of exchanges of energy and mass at the earth-atmosphere interface as it relates to microclimates with particular emphasis upon radiation and climate.

**Microclimatology: Microclimatological Measurements**

See Geog 622.02-Practical experience in the fabrication of instruments, deployment of measurement systems in the field and recording of data related to microclimates.

**Synoptic Meteorology: Synoptic Analysis and Forecasting**

See Geog 623.01-Theory and practice in synoptic weather analysis and forecasting.

**Synoptic Meteorology: Severe Storm Forecasting by Radar and Satellite**

See Geog 623.02-The theory and application of radar and satellite imagery in weather forecasting; emphasis on severe thunderstorms, tornadoes, and hurricanes; analysis of their evolution and structure.

**Fundamentals of Atmospheric Dynamics**

See Aero Eng 765-Advanced level treatment of basic topics in the dynamics and thermodynamics of atmospheric motion.

**Dynamic Climatology**

See Geog 821-Dynamics, thermodynamics, energy conservation, flows, conversion processes; large scale circulation patterns with particular emphasis upon turbulence at the synoptic scale; weather processes, and regional climates.

**Microclimatology**

See Geog 822-Radiation and turbulence processes, conduction; variation wind, temperature, humidity, soil moisture, evaporation, soil temperature; influence of vegetation and artificial structures.

**Applied Climatology**

See Geog 823-Analysis of climatic and environmental change on various time scales; man's impact on climate; theory and application of long-range and climate forecasting.

**230 Basic Meteorology U 5**

Introduction to the underlying physics of the atmosphere; basic equations of thermodynamics, radiation, and dynamics are presented and used to explain selected atmospheric phenomena.

Au Qtr. 5 cl. Prereq: Math 152 and Physics 132.

**620 Synoptic Meteorology Laboratory U G 3**

Introduction to reading and interpretation of synoptic weather maps and diagram- and data-communication systems.

Au Qtr. 2 cl, 1 lab hr. Prereq or concur: 230 or Geog 520. Not open to students with credit for Geog 620. Cross-listed in Geography.

**631 Atmospheric Thermodynamics U G 5**

An analysis of the fundamentals of atmospheric thermodynamics and their application to meteorological problems.

Au Qtr. 5 cl. Prereq: Math 153.

**637 Dynamic Meteorology I U G 5**

Fundamental problems in dynamic meteorology; components of the equations of atmospheric motion are derived, and vorticity and divergence in the development of meteorological systems.

Wi Qtr. 5 cl. Prereq: 631 or Aero Eng 505, and Math 415.

**638 Dynamic Meteorology II U G 5**

Advanced problems in dynamic meteorology; use of the equations of motion in numerical models of the atmosphere, especially those used by the National Weather Service.

Sp Qtr. 5 cl. Prereq: 637 or Aero Eng 765.

**693 Individual Studies in Atmospheric Sciences U G 1-5**

Independent studies on selected atmospheric sciences related topics.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**694 Group Studies in Atmospheric Sciences U G 1-5**

Special studies on topics directly related to the atmospheric sciences.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**881 Atmospheric Sciences Seminar G 2-4**

A multidisciplinary seminar reviewing selected topics in atmospheric sciences and related fields.

Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**893 Individual Studies in Atmospheric Sciences G 1-5**

Reviews the state-of-the-art of selected topics in the atmospheric sciences-related fields of meteorology and climatology, air environment studies, or aeronomy and solar-terrestrial relations.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**894 Group Studies in Atmospheric Sciences G 1-5**

Advanced studies on topics directly related to the atmospheric sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**999 Research in Atmospheric Sciences G 1-18**

Research for thesis or dissertation purpose only.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in atmos sc. Repeatable. This course is graded S/U.

## Aviation

Aviation Building, 164 West 19th Avenue, 292-2405

**294^ Group Studies in Aviation U 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**300 The National Aviation System U 3**

A comprehensive survey of the national aviation system.

Au, Wi, Sp Qtrs. 2 cl or 1 3-hr cl.

**310 Private Pilot Fundamentals U 5**

Study of flight fundamentals, aircraft operation, weather, and regulations essential for the private pilot.

Su, Au, Wi, Sp Qtrs. 5 cl, or 1 2-hr cl and 1 3-hr cl. Prereq: Math 131, Physics 111.

**322 Aviation History U 3**

A survey of the evolution of aviation; emphasis on the development of the national aviation system and its social, economic, and political impact.

Sp Qtr. 2 cl, or 1 3-hr cl.

**324^ Distinguished Aviation Lecture Series U 2**

An overview of contemporary opportunities, challenges, and trends in aviation; invited presentations by distinguished guest speakers supplemented by faculty lectures.

Sp Qtr. 2 1-hr cl. Repeatable to a maximum of 6 cr hrs.

**341 Private Pilot Flight Lab I U 2**

Laboratory course providing students an opportunity to learn the fundamentals of flight and airplane operation leading to solo flight.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**342 Private Pilot Flight Lab II U 2**

Laboratory course providing students an opportunity to learn the fundamentals of flight and airplane operation leading to Private Pilot certification.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 310 and 341. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**410 Aviation Weather U 3**

Overview of weather theory; identification of aviation weather hazards and methods for obtaining current weather data.

Au, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 310.

**411 Aircraft Performance U 3**

Studies of airframe components, performance and design characteristics, power plants, and federal certification of aircraft.

Au Qtr. 3 cl or 1 3-hr cl. Prereq: 310 and Physics 111 or higher.

**413 Commercial Pilot Fundamentals U 3**

A study of high-performance airplane operational considerations, systems, and components and the Federal Aviation Regulations which govern the operations, privileges, and limitations of commercial pilots.

Wi, Sp Qtrs. 1 3-hr cl. Prereq: 410.

**414 Flight Physiology U 3**

An examination of the adverse effects of flight on human physiological functions, perceptions, and performance.

Au Qtr. 3 cl or 1 3-hr cl. Prereq: 310.

**415 Instrument Flight Fundamentals U 3**

Study of flight by reference to instruments, IFR regulations, and procedures in the national airspace system.

Au, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 410.

**417 Advanced Multiengine Operations U 2**

The study of the principles of operation of the contemporary corporate airplane.

Wi Qtr. 1 2-hr cl. Prereq: 411.

**418 Air Transport Operations U 3**

Examination of the elements of airline transport operations and the functions of the aircraft dispatcher and flight engineer.

Sp Qtr. 1 3-hr cl. Prereq: 411 and 415.

**421 Flight Instruction Methodology U 3**

Principles of teaching aeronautical subjects.

Au Qtr. 1 3-hr cl. Prereq: 411, 413, and 415.

**422^ Instrument Instruction Methodology U 2**

Principles of teaching instrument flight theory and requirements.

Sp Qtr. 1 2-hr cl. Prereq: 421.

**441 Commercial Flight Lab 1 U 3**

Development of commercial pilot skills and experiences, fundamentals of instrument flight.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 342. Obtain equipment usage charge and permission slip at Ohio State Airport prior to scheduling.

**442 Commercial Pilot Flight Lab 2 U 3**

Further development of commercial pilot skills and experience, completion of instrument flight instruction.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 415 and 441. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**443 Commercial Pilot Flight Lab 3 U 3**

Complex airplane (SEL) flight instruction.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 442. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**444 Commercial Pilot SEL Flight Lab 4 U 3**

SEL commercial and instrument flight skills.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 413 and 443. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**445 Commercial Pilot SEL Flight Lab 5 U 3**

Leads to SEL commercial certificate.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 444. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**446 Commercial Pilot MEL Flight Lab 4 U 3**

Development of MEL commercial pilot flight skills; leads to multi-engine rating.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 413 and 443. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**447<sup>A</sup> Commercial Pilot MEL Flight Lab 5 U 3**

Development of MEL instrument flight skills; leads to MEL instrument rating.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 446. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**461 Flight Instructor ASEL Flight Lab U 3**

Development of skills and experience necessary for certification as flight instructor airplane SEL.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 421 and 445 or 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**462 Flight Instructor Instrument Airplane Flight Lab U 3**

Development of skills and experience necessary for flight instructor instrument rating.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 422 and 445 or 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**463 Flight Instructor AMEL Flight Lab U 3**

Development of skills and experience necessary for airplane MEL rating.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 421 and 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**489 Professional Practice in Industry U 2**

Actual employment in a co-op program in the aviation industry and the preparation of a report based on the work experience.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to co-op program in aviation and written permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**493 Individual Studies in Aviation U 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**510<sup>A</sup> The National Airspace System U 3**

Overview of proposed national airspace system careers, implementation, airspace, facilities, safety, new electronic systems, economic, social, and political implications.

Au Qtr. 1 3-hr cl. Prereq: 415.

**520 Aviation Communication U 3**

Communication skills and theory for the aviation professional; includes pilot/ATC radio communications, public relations, organizational structure, and written and verbal reports.

Wi, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 300, 310 and a second writing course. GEC/LAR course.

**522<sup>A</sup> Principles of Aviation Organizations U 3**

Applied study of communication in and the structure of aviation organizations: FBO, FAR 135, FAR 121, and Corporate.

Sp Qtr. 3 cl or 1 3-hr cl. Prereq: 520.

**530 Aviation Law U 3**

Study of the legal system and the important legal concepts affecting aviation.

Au, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 520.

**532 Aviation Safety Investigation U 3**

Functions of air safety investigation, aircraft accident reconstruction and investigation, aircraft accident prevention, and role of expert witness.

Sp Qtr. 1 3-hr cl. Prereq: 411.

**540 Aviation Human Factors U G 3**

An examination of human factors problems in aviation safety including aircraft design, aviation systems design, and human behavior.

Au, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 310; 410 and 415 recommended.

**550 Aviation Management U 3**

A blend of accepted business procedures and practical techniques applied to aviation management; includes general aviation; airlines, airports, aircraft, and air traffic control.

Au, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 300, 310 and Econ 200.

**552 Airport Management U 3**

Comprehensive study of airport operations and management; role of the airport manager in planning, finance, administration, public relations, socio-political and environmental considerations, and operational requirements and maintenance.

Wi, Sp Qtrs. 1 3-hr cl. Prereq: 550.

**593 Individual Studies in Aviation U G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**595<sup>A</sup> Senior Seminar U 2**

Selected studies of theory and practice in aviation; topic varies quarterly.

Wi Qtr. 1 2-hr cl. Open only to aviation majors with sr standing.

**640 Man-Machine Simulation in Training and Engineering U G 3**

An analysis of current research and problems in man-machine simulation of complex systems for training and research.

Sp Qtr. 3 cl or 1 3-hr cl. Prereq: 415 and 540.

**642 Pilot Judgment and Crew Resource Management U G 3**

An examination of individual and group decision making in aviation.

Sp Qtr. 2 1.5-hr cl. Prereq: 540. Required for Aviation Systems and Human Factors Specialties.

**650 Air Transportation Analysis U G 3**

Analysis and planning of air transportation systems; focus on air transportation supply and demand components, and examples from U.S. domestic and international airlines, passenger and cargo.

Au, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 550 and Econ 400.

**652 The International Aviation System U G 3**

Overview of the international system: aeropolitical framework, air transport, air navigation, and contemporary issues.

Wi Qtr. 3 cl or 1 3-hr cl. Prereq: 550.

**654 Airline Marketing U G 3**

Contemporary marketing concepts and procedures and their applications in the airline industry with emphasis on domestic and international passenger analysis and service planning.

Wi Qtr. 3 cl or 1 3-hr cl. Prereq: 550.

**694 Group Studies in Aviation U G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

## Biochemistry

776 Biological Sciences Building, 484 West 12th Avenue, 292-6771

**211 Elements of Biochemistry I U 3**

A survey of biochemistry in a two-quarter sequence stressing the qualitative rather than the quantitative approach.

Au Qtr. 3 cl. Prereq: Chem 102 or 122. Credit does not count toward a major in biochem. This course is available for EM credit.

**212 Elements of Biochemistry II U 3**

A continuation of 211.

Wi Qtr. 3 cl. Prereq: 211. Credit does not count toward a major in biochem.

**294 Group Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. For different subject matter only.

**511 Introduction to Biological Chemistry U G 5**

An introductory course in biochemistry dealing with the molecular basis of structure and metabolism of plants, animals, and microorganisms.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Chem 123 and 242 or 252, and 2 qtrs of biological sciences. The organic chemistry requirement may also be satisfied by Chem 231 with a grade of at least C. This course is available for EM credit.

**512 Biochemistry of Physiological Processes U G 5**

The biochemical basis for physiological processes in higher animals; topics include digestion and absorption, respiration, blood function, kidney function, and endocrine control.

Sp Qtr. 5 cl. Prereq: 511 or equiv; a course in physiol recommended.

**521 Introduction to Biological Chemistry: Laboratory U G 5**

Assay techniques for chemical constituents and metabolic reactions of living cells.

Su, Au, Sp Qtrs. 2 cl, 2 3-hr labs. H521 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 521: 511 or 613 or equiv. Prereq for H521: 511 or 613 or equiv, and Chem 221.

**613 Biochemistry and Molecular Biology U G 4**

An introductory course in biochemistry and molecular biology developing in three quarters the molecular basis of structure and function of living cells.

Au Qtr. 4 cl. Prereq: Chem 242 or 253, and 2 qtrs of biological sciences. Not open to students with credit for 511 without written permission of instructor. Not open to students with credit for 513. This course is available for EM credit.

**614 Biochemistry and Molecular Biology U G 4**

Continuation of 613.

Wi Qtr. 4 cl. Prereq: 613. This course is available for EM credit.

**615 Biochemistry and Molecular Biology U G 4**

Continuation of 614.

Sp Qtr. 4 cl. Prereq: 614. This course is available for EM credit.

**693 Individual Studies U G 02-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs. for grad credit and a maximum of 20 cr hrs for undergrad credit. This course is graded S/U.

**694 Group Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**702 Molecular Genetics: Regulation of Gene Expression U G 3**

Transcription, translation, and regulation of gene expression in prokaryotes and eukaryotes; emphasis on concepts and experimental analysis of gene regulatory mechanisms.

Wi Qtr. 3 cl. Prereq: Mol Gen 701 or permission of instructor.

**708 Protein and Enzyme Laboratory U G 5**

Purification, characterization, and study of the physical and catalytic properties of enzymes and proteins.

Wi Qtr. 3 4-hr labs. Prereq: 521 and 761; or equivalents; or permission of instructor.

**710 Molecular Biology Laboratory U G 5**

Isolation of recombinant phage and phage DNA, subcloning of DNA fragments, restriction enzyme analysis, nucleic acid hybridization, RNA metabolism.

Sp Qtr. 3 4-hr labs. Prereq: 521 and 511 or 702; or equivalents; or permission of instructor.

**721 Physical Biochemistry****721.01 Physical Biochemistry I U G 3**

Introduction to physical chemistry with emphasis on biological applications; designed for students in the life sciences.

Au Qtr. 3 cl. Prereq or concur: 511 or 613, Math 153 (254 recommended), and Physics 113 or 133; or permission of instructor.

**721.02 Physical Biochemistry II U G 3**

A continuation of 721.01.

Wi Qtr. 3 cl. Prereq 511 or concur: 614 and 721.01; or permission of instructor.

**721.03 Physical Biochemistry III U G 3**

A continuation of 721.02.

Sp Qtr. 3 cl. Prereq: 721.02.

**735 Plant Biochemistry I U G 3**

The biochemistry of plant chloroplasts and mitochondria: photosynthesis, carbohydrate metabolism, sulfate and nitrate reduction, chlorophyll and heme synthesis, chloroplast development, respiration, and mitochondrial development.

Au Qtr. 3 cl. Prereq: 511 or 614. Not open to students with credit for 631 prior to Wi Qtr 1988, or to students with credit for 635 prior to Wi Qtr 1995, or to students with credit for Plant Bio 735. Cross-listed in Plant Biology.

**736 Plant Biochemistry II U G 3**

The biochemistry of plants with emphasis on the synthesis and structure of cell walls, lipids, secondary compounds, phytohormones, and nitrogen fixation.

Wi Qtr. 3 cl. Prereq: 735. Not open to students with credit for 631 prior to Wi Qtr 1988, or to students with credit for 635 prior to Wi Qtr 1995, or to students with credit for Plant Bio 736. Cross-listed in Plant Biology.

**761 Advanced Biochemistry: Proteins U G 3**

An advanced treatment of protein biochemistry.

Au Qtr. 3 cl. Prereq: 615 and Chem 253, 255, and 521; or equivalents. Not open to students with credit for 705, Chem 761, MBiochem 761 or Physchem 705 or 761. Cross-listed in Chemistry and Medical Biochemistry.

**762 Advanced Biochemistry: Enzymes U G 3**

An advanced treatment of enzymology.

Au Qtr. 2 1.5-hr cl. Prereq: 615 and Chem 253, 255, and 521; or equivalents. Not open to students with credit for 705, Chem 762, or MBiochem 705 or 762. Cross-listed in Chemistry and Medical Biochemistry.

**763 Advanced Biochemistry: Membranes and Bioenergetics U G 2**

An advanced treatment of membranes and bioenergetics.

Wi Qtr. 2 cl. Prereq: 615 and Chem 253, 255, and 521; or equivalents. Not open to students with credit for 707, Chem 763, MBiochem 765, or Physchem 707, or 763. Cross-listed in Chemistry and Medical Biochemistry.

**765 Advanced Biochemistry: Physical Biochemistry U G 3**

Nuclear magnetic resonance, optical spectroscopy, and mass spectroscopy.

Sp Qtr. 1 2.5-hr cl. Prereq: 615 and Chem 253, 255, and 521; or equivalents. Not open to students with credit for Chem 765 or MBiochem 765 or Physchem 765. Cross-listed in Chemistry and Medical Biochemistry.

**766 Advanced Biochemistry: Nucleic Acid Chemistry and Structure U G 2**

Reactions, synthesis, and conformations of nucleosides, nucleotides, oligonucleotides, and polynucleotides.

Wi Qtr. 2 cl. Prereq: 615 and Chem 253, 255, and 521; or equivalents. Not open to students with credit for Chem 766 or MBiochem 766 or Physchem 766. Cross-listed in Chemistry and Medical Biochemistry.

**770 Protein Engineering U G 3**

Current research on genetic engineering of proteins for biotechnological and theoretical studies.

Au Qtr. 2 1.5-hr cl. Prereq: 702, 761, and Microbiol 680 or Mol Gen 701.

**775 Biophysical Chemistry U G 3**

Techniques and principles of physical biochemistry, emphasizing chromatography, electrophoresis, centrifugation, ultrafiltration, and circular dichroism.

Sp Qtr. 3 cl. Prereq: Introductory courses in biochemistry and physical chemistry or permission of instructor.

**H783 Honors Research U 3-5**

A program of reading and research for each student with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the courses in biochem and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degrees BA or BS with distinction in biochem. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**785 Research Principles and Techniques U G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs. for grad credit and a maximum of 20 cr hrs for undergrad credit.

**795 Special Topics in Biochemistry U G 1-3**

Lecture/discussion in a seminar format of publications, current research, or research techniques in biochemistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 521 and 615; or permission of instructor. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**811 Advanced Topics in Molecular Genetics G 3**

An examination of the current research in molecular genetics by selective reading assignments and critical analysis during class discussion periods.

Wi Qtr. 3 hrs arr. Prereq: 611 or 702, or Mol Gen 611. Repeatable to a maximum of 6 cr hrs. Including cr hrs earned in Mol Gen 811. Cross-listed in Molecular Genetics.

**821 Enzymes G 3**

Advanced studies of enzymes and the mechanism of enzyme action.

Wi Qtr. 3 cl. Prereq: 709 or equiv.

**831 Current Topics in Human and Cancer Genetics G 3**

Current research in human and cancer genetics.

Au Qtr. 2 1.5-hr cl. Prereq: 702 or equiv, Mol Gen 733 or equiv. Not open to students with credit for 781, or Mol Gen 781 or 831, or MBiochem 831. Repeatable to a maximum of 6 cr hrs. Including cr hrs earned in MCBMG 831 and MVIMG 734. Cross-listed with Molecular and Cellular Biochemistry and Molecular Genetics 831, and Molecular Virology, Immunology and Medical Genetics 734.

**850 Seminar in Biological Chemistry G 2**

Au, Wi, Sp Qtrs. 1 or 2 cl. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.



**890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2**

Students will present oral reports and lead discussion on research progress in specific areas of developmental biology.

1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Biochemistry, Molecular Genetics, Microbiology, and Plant Biology. This course is graded S/U.

**900 Advanced Topics in Biochemistry G 1-3**

Advanced treatment of areas of current interest in biochemistry; topics will be announced each quarter.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 613 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**999 Research in Biochemistry G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Biological Sciences: Interdisciplinary**

105 Biological Sciences Building, 484 West 12th Avenue, 292-8772

**100 Biological Sciences Survey U 1**

Academic requirements, University procedures, grading system, resources; students rights and responsibilities; overview of Biological Sciences areas of study, Arts and Sciences services.

Au Qtr. H100 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Agr Int 100, Arts Col 100.01 or 100.02, Arts&Sci 100 or 100.01 or 100.02, Engineer 100, Hum Col 100, MPS Col 100, SBS Col 100, or any decimal subdivision of Univ Col 100. This course is graded S/U.

**797 Interdepartmental Seminar G 1-5**

Two or more departments or colleges may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable by permission. This course is graded S/U.

**Biology**

General Biology Annex, 1791 Neil Avenue, 292-9861

See also courses in Biochemistry; Entomology; Evolution, Ecology, and Organismal Biology; Microbiology; Molecular Genetics; Plant Biology.

**101 Introductory Biology U 5**

Basic principles of biology; topics include nature of science, organismal diversity, evolution, ecology, genetics, reproduction, cell structure and function.

Su, Au, Wi, Sp Qtrs. 3 cl, 1 3-hr rec/lab; or 2 1.5-hr cl, 1 3-hr rec/lab. Prereq: Math 075 or 076 or 104 or Mathematics Placement Level R. Not open to students with credit for 113 or H115, or Entomol 101, or Plant Bio101. Not intended for the student pursuing an undergraduate major in one of the biological sciences. This course is available for EM credit. GEC bio sci course.

**102 Human Biology U 5**

Exploration of human biology; topics include structure and physiological function, reproduction and development, genetics and disease, ecology and evolution.

Su, Au, Wi, Sp Qtrs. 3 cl or 2 1.5-hr cl, 1 2-hr film/video presentation, 1 rec. Prereq: 101. Not open to students with credit for 114 or H116. Not intended for the student pursuing an undergraduate major in one of the biological sciences. This course is available for EM credit. GEC bio sci course.

**113 Biological Sciences: Energy Transfer and Development U 5**

Exploration of biology and biological principles; topics include cell structure and function, reproduction and development of plants and animals, bioenergetics, genetics, and evolution.

Su, Au, Wi, Sp Qtrs. 3 cl or 2 1.5-hr cl, 1 3-hr lab, 1-hr rec. Prereq: Chem 101 or 121 or H201. Not open to students with credit for H115. This course and 114 provide a comprehensive two-qtr sequence in general biology. This course is available for EM credit. GEC bio sci course. NS Admis Cond course.

**114 Biological Sciences: Form, Function, Diversity, and Ecology U 5**

Continuation of 113; diversity in structure, function, behavior, and ecology among prokaryotes and eukaryotes.

Su, Au, Wi, Sp Qtrs. 4 cl, 1 3-hr lab. Prereq: 113. Not open to students with credit for H116. This course is available for EM credit. GEC bio sci course. NS Admis Cond course.

**H115 Honors Biology I U 5**

Molecular and cellular processes in living systems with emphasis on current research.

Au, Wi Qtrs. 3 cl, 1 3-hr lab, 1 1-hr rec. Prereq: Chem 121 or H201, and enrollment in an honors program. Not open to students with credit for 113. Intended for the undergraduate student pursuing a major in the life sciences. GEC bio sci course. NS Admis Cond course.

**H116 Honors Biology II U 5**

Continuation of H115.

Wi, Sp Qtrs. 3 cl, 1 3-hr lab, 1 1-hr rec. Prereq: H115. Not open to students with credit for 114. GEC bio sci course. NS Admis Cond course.

**592 Workshop in Biology****592.01 Workshop for Middle School Teachers: Part 1 G 3**

Lecture and discussion of fundamental areas of biology as well as corresponding laboratory modules suitable for use in middle school life science classes.

Su Qtr. 2 wks, M-F, all-day cl. Prereq: Middle school or jr high school teachers employed in Ohio who teach life sci or general sci with a life sci component. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**592.02 Workshop for Middle School Teachers: Part 2 G 3**

Participants develop, test, and perfect a new laboratory exercise; discuss and solve problems relating to use of materials for 592.01 and their new exercise.

Sp Qtr. 6 2-hr cl, 1 2-day workshop. Prereq: 592.01. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**592.03 Workshop in Biology for High School Teachers: Part 1 G 3**

Lecture and discussion of fundamental areas of biology with corresponding laboratory modules suitable for use in high school life science classes.

Su Qtr. 2 wks, M-F, all day. High school teachers employed in Ohio who teach life science or general science with a life science component. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**592.04 Workshop in Biology for High School Teachers: Part 2 G 3**

Participants develop, test, and perfect a new laboratory exercise and discuss and solve problems relating to use of materials from 592.03 and their new exercise.

Su Qtr. 6 2-hr cl, 1 2-day workshop. Prereq: 592.03. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**592.05 Biology by Inquiry for Middle School Teachers: Part 1 G 12**

The emphasis of the course is the improvement of the life science content knowledge of middle school biology teachers through inquiry based instruction.

Su Qtr. 6 wks, 2 3-hr cl per day, 4 days per wk. Middle school life science teachers, participants in Project Discovery Life Science Institute.

**592.06 Biology by Inquiry for Middle School Teachers: Part 2 G 3**

The emphasis of the course is the improvement of the life science content knowledge of middle school biology teachers through inquiry based instruction.

Au Qtr. Middle school life science teachers, participants in Project Discovery Life Science Institute. Repeatable to a maximum of 6 cr hrs.

**597 Biology of Human Diversity: Race, Gender, and Ethnicity U 5**

Historical perspectives on contemporary issues in human biology and biocultural problems.

Wi Qtr. 3 cl, 1 2-hr rec. Prereq: 10 cr hrs of biological sciences course work and sr standing. GEC contemporary world and social diversity course.

**693 Individual Studies U 1-5**

A program of individual research in the biological sciences appropriate for the student's needs.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 113 or H115, and 114 or H116, and permission of adviser and supervising instructor. Biology majors carrying out research in the College of Biological Sciences should register for 693 in supervising instructor's dept. Repeatable to a maximum of 20 cr hrs. Not more than 5 cr hrs of 693 or H783 may be counted toward an undergrad major in biology. This course is graded S/U.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of College of Biological Sciences Academic Advisor or Biology Coordinating Advisor. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**H783 Honors Research U 1-5**

A program of individual research in the biological sciences appropriate for the student's needs and culminating in an honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 113 or H115, and 114 or H116, and permission of adviser and supervising instructor. Biology majors carrying out research in the College of Biological Sciences should register for H783 in supervising instructor's dept. Repeatable to a maximum of 20 cr hrs. Not more than 5 cr hrs of 693 or H783 may be counted toward an undergrad major in biology. This course is graded S/U.

## Biomedical Engineering

270 Bevis Hall, 1080 Carmack Road, 292-7152

Advanced Mammalian Physiology II

See Physiol 601-First of a two-quarter sequence presenting the following areas of physiology: neuromuscular, heart and circulation, endocrine, brain and special senses, body fluids and kidney, respiration, digestion, temperature control, and metabolism.

Advanced Mammalian Physiology II

See Physiol 602-Continuation of 601.

### 400 Survey of Biomedical Engineering U 3

Multi-lecturer survey course designed to introduce fundamental technologies and design methodologies relevant to biomedical engineering product development and clinical applications.

Au Qtr. 3 1-hr cl. Prereq: EEOB 232, Mech Eng 410 or equiv.

### 551 Professional Issues in Biomedical Engineering U G 3

Introduction to professional and ethical issues confronting biomedical engineers and approaches to dealing with such issues.

Wi Qtr. 2 1.5-hr cl. Prereq: 400 and jr, sr or grad standing.

### 571 Introduction to Bioinstrumentation U G 3

Measurement and analysis of signals generated by biomedical transducers and bioelectric potentials, and their relationship to human physiology and bodily function.

Wi Qtr. 2 1.5-hr cl. Prereq: 400, Elec Eng 300 or equiv.

### 581 Group Design Project I U G 3

Methodology and practice in the design of a specific biomedical device or system from concept to engineering drawings and specifications; written assignments and oral presentations.

Wi Qtr. 2 1.5-hr cl. Prereq: 400, Mech Eng 420 or equiv, Elec Eng 300 or equiv, and sr standing.

### 582 Group Design Project II U G 3

Continuation of 581; design of a specific biomedical device or system from engineering drawings and specifications to prototypes and clinical trials.

Sp Qtr. 2 1.5-hr cl. Prereq: 581.

### 600 Introduction to Biomedical Engineering U G 3

Introduction to the engineering aspects of life science, utilizing lectures from engineering, medicine, and life science.

Au Qtr. 3 cl. Prereq: Grad standing or permission of instructor. Undergraduates may enroll with permission of instructor.

### 631 Fundamentals of Biomaterials U P G 3

Review of basic concepts of materials science; biocompatibility and biological reactions to implanted materials; natural biomaterials and synthetic materials used in biological applications.

Wi Qtr. 3 cl. Prereq: Statics, Strength of Materials, Physiology or permission of instructor.

### 686 Introduction to Biomedical Ultrasound U G 3

Introduction to use of ultrasound in biomedical applications, including interaction of ultrasound with tissue; generation, reception and interpretation of ultrasonic signals; and clinical instrumentation.

Sp Qtr. 2 1.5-hr cl. Prereq: Math 255 or 415 or equiv and Physics 133 or equiv; or grad standing.

### 690 Introduction to Medical Device Regulation P G 3

Regulatory Affairs training program for Graduate Biomedical Engineers.

Su Qtr. Course offered at off-campus site. An intensive one-week 40-hr seminar series focusing on the regulatory affairs issues and practices in the medical devices industry. This course is graded S/U.

### 692 Biomedical Engineering Workshop G 1

Workshop focused on a selected topic in Biomedical Engineering.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

### 694 Group Studies in Biomedical Engineering U G 1-5

Provides groups of students opportunities to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 721 Biological Transport U G 3

Theoretical and phenomenological derivation of transport mechanisms important for biological systems. Includes passive, active and extracellular transport.

Sp Qtr. 2 1.5-hr cl. Prereq: Math 255 or 415, Mech Eng 500 or equiv, and Chem 125 or equiv.

### 733 Hard-Tissue Biomaterials U P G 3

Structure and material properties of musculoskeletal materials and the synthetic materials used in musculoskeletal reconstruction.

Sp Qtr. 2 1.5-hr cl.

### 771 Biomedical Instrumentation G 4

Study of instruments and measurement techniques used in obtaining data from living systems.

Sp Qtr. 1 2-hr and 1 3-hr cl plus 5 3-hr labs. Prereq: Grad standing in Biomed E; Math 255 or 415 or equiv, Physics 133 or equiv, or Elec Eng 550, or permission of instructor. Not open to students with credit for Elec Eng 771.

### 793 Individual Studies in Biomedical Engineering U G 1-15

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 813 Magnetic Resonance Spectroscopy and Imaging I G 3

Presentation of the basic principles of MRI/MRS, including basic MR physics, pulse sequences, adiabatic excitation coil design, MR hardware image formation, localized spectroscopy.

Au Qtr. 2 1.5-hr lectures. Prereq: Grad standing and permission of instructor. Cross-listed in Radiology.

### 814 Magnetic Resonance Spectroscopy and Imaging II G 3

Presentation of the basic principles of MRI/MRS, including basic MR physics, pulse sequences, adiabatic excitation coil design, MR hardware image formation, localized spectroscopy.

Wi Qtr. 2 1.5-hr lectures. Prereq: 813, grad standing and permission of the instructor. Cross-listed in Radiology.

### 881 Seminar in Biomedical Engineering

Weekly seminars by students and faculty.

Au, Wi, Sp Qtrs. 1 cl. Required of all biomed e students. Final grade awarded upon completion of 3 quarters. All biomed e students must complete the following series of 881 classes for 2 hrs credit.

#### 881.01 Seminar in Biomedical Engineering I G 0

This course is graded S/U.

#### 881.02 Seminar in Biomedical Engineering II G 0

1 hr cl. Prereq: 881.01. This course is graded S/U.

#### 881.03 Seminar in Biomedical Engineering III G 1

1 hr cl. Prereq: 881.02. This course is graded S/U.

#### 881.04 Seminar in Biomedical Engineering IV G 0

1 hr cl. Prereq: 881.03. This course is graded S/U.

#### 881.05 Seminar in Biomedical Engineering V G 0

1 hr cl. Prereq: 881.04. This course is graded S/U.

#### 881.06 Seminar in Biomedical Engineering VI G 1

1 hr cl. Prereq: 881.05. This course is graded S/U.

### 894 Group Studies in Biomedical Engineering G 1-18

Provides graduate students with an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

### 990 Advanced Topics in Biomedical Engineering

Advanced study of topics of special interest in Biomedical Engineering.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Biomed eng grad standing or permission of instructor.

#### 990.02 Cardiovascular Fluid Mechanics, Transport and Imaging G 1-3

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

#### 990.03 Sensory Integration, Neural Networks and Life-Cycle Design G 1-3

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

#### 990.04 Hard-Tissue Biomaterials G 1-3

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

#### 990.05 Optical Techniques, Lasers, and Tissue Response G 1-3

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

### 999 Research in Biomedical Engineering G 1-18

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Biophysics

105 Biological Sciences Building, 484 West 12th Avenue, 292-8772

### Introduction to Sensory Biophysics

See SensBiop 601-Anatomy and function of sensory systems; psychophysical research methods; mathematical descriptions of information transfer; biophysical models.

### Introduction to Biophysics

See Micrbiol 603-Introductory course in the approach to biological phenomena from conceptual viewpoint to viewpoint of physical sciences; molecular to organismic levels of biological hierarchical structure.

### Introduction to Quantum Biology

See Micrbiol 641-An introduction to applications of elementary quantum mechanics to problems in biology; conceptual rather than mathematical aspects are stressed.

### 697 Study at a Foreign Institution U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

### 702^ Advanced Experimental Methods in Biophysics U G 1-3

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

### 793 Individual Studies U G 1-5

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

### 795 Seminar in Biophysics U G 1-2

Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

### 813 Magnetic Resonance Spectroscopy and Imaging I G 3

Basic principles of MRI/MRS including basic MR physics, pulse sequences, adiabatic excitation coil design, MR hardware, image formation, localized spectroscopy.

Au Qtr. 2 1.5-hr cl or 3 cl. Prereq: Chem 521 or equiv, Biochem 511 or equiv, grad standing, and permission of instructor. Not open to students with credit for Biomed E 813 or Radiology 813. Cross-listed in Biomedical Engineering and Radiology.

### 814 Magnetic Resonance Spectroscopy and Imaging II G 3

Continuation of 813.

Wi Qtr. 2 1.5-hr cl or 3 cl. Prereq: 813 or Biomed E 813 or Radiology 813, grad standing, and permission of instructor. Not open to students with credit for Biomed E 814 or Radiology 814. Cross-listed in Biomedical Engineering and Radiology.

### 999 Research in Biophysics G 1-18

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Biostatistics

404 Cockins Hall, 1958 Neil Avenue, 292-2866

### H318 Introduction to Biostatistics U 5

Descriptive statistics, probability, models for population distributions, estimation, hypotheses testing, correlation, regression, categorical data analysis; emphasizes analysis of biomedical data using statistical software.

Su Qtr. 3 1.5-hr cl. Prereq: Math 153 or 162 or H162, or permission of instructor. Not open to students with credit for Mol Gen 650, or Stat 145 or 245. For honors students majoring in biological/medical sciences.

### 605^ Applied Survival Analysis U G 3

Techniques for analyzing censored data including: life table and product limit estimators; parametric estimation; K-sample nonparametric tests; parametric and semiparametric regression.

Wi Qtr. 3 cl. Prereq: Stat 426, 521, 529, or equiv.

### 615 Design and Analysis of Clinical Trials U G 3

Design, monitoring, and analysis of clinical trials; includes protocol development, randomization schemes, sample size methods, and ethical issues.

Wi Qtr. 3 cl. Prereq: Stat 528 and 529, or equivs.

### 805\* Survival Analysis I G 3

Counting process approach to life history data: Nelson-Aalen estimators; product limit estimators; K-sample estimators.

Wi Qtr. Prereq: Stat 722 or permission of instructor.

### 806\* Survival Analysis II G 3

Parametric models, semiparametric proportional hazards regression, additive hazards regression, multivariate survival models.

Sp Qtr. 3 cl. Prereq: 805.

### 865^ Analysis of Discrete Data G 3

Theory of techniques for the analysis of discrete data including: two-way and multidimensional tables; logistic regression; loglinear models; chi-squared tests; numerical methods.

Sp Qtr. 3 cl. Prereq: Stat 622, 742, or permission of instructor.

### 882 Advanced Topics in Biostatistics G 3

Selected topics in biostatistics.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

### 999 Research in Biostatistics G 1-18

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Bulgarian

232 Cunz Hall, 1841 Millikin Road, 292-6733

See also Slavic Languages and Literatures.

### 101 Elementary Bulgarian I

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

#### 101.01 Classroom Track U 5

Au Qtr.

#### 101.51 Individualized Track U 1-5

Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

### 102 Elementary Bulgarian II

Development of oral and written language skills.

Prereq: 101 or 101.01 or 5 cr hrs of 101.51. GEC for lang courses. FL Admis Cond courses.

#### 102.01 Classroom Track U 5

Wi Qtr.

#### 102.51 Individualized Track U 1-5

Prereq: B- or above in 101 or 101.01, or 5 cr hrs of 101.51, or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

### 103 Intermediate Bulgarian I

GEC for lang course.

#### 103.51 Individualized Track U 1-5

Prereq: B- or above in 102.01 or 5 cr hrs of 102.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor.

### 104 Intermediate Bulgarian II

GEC for lang course.

#### 104.51 Individualized Track U 1-5

Continuation of 103; development of the four skills.

Prereq: 5 cr hrs of 103.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor.

### 111 Intensive Intermediate Bulgarian U 10

Readings, oral and written practice, grammar review.

Sp Qtr. Prereq: 102 or equiv. Equiv to the 3rd and 4th courses of the foreign language sequence. GEC for lang course.

## Business Administration

100 Schoenbaum Hall, 210 West Woodruff Avenue, 292-2715

### 100 College of Business Survey U 1

Academic requirements and resources; University policies college procedures and resources; student rights and responsibilities; academic areas of specialization; careers in accounting and business administration.

Au Qtr. 2 cl. H100 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 1st qtr freshman standing in direct enrollment program in BUS. Not open to students with credit for UVC 100.

### 201 Business Career Planning U 2

Exploration of business careers through self-assessment, informational interviews, and employer presentations; information on co-ops/internships and job search strategies.

Au, Wi, Sp Qtrs. 2 1-hr cl. H201 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Soph standing and enrollment in the College of Business, others by permission of instructor. 3.40 CPHR required for honors version.

### 493 Individual Studies U 1-10

Individual study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

### 494 Group Studies U 1-10

Group study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

### 499 Business Skills and Environment I U 4

Introduction to the environment of business and development of skills preparatory to the multi-disciplinary upper division curriculum in business.

Au, Sp Qtrs. 2 2-hr cl. H499 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Soph standing in the Fisher College of Business. Open only to students enrolled in the College of Business. To be taken during the quarter of admission to the College of Business.

### H502 Honors Seminar U 1-2

Seminar on current business topics for students enrolled in the Business Administration Honors Program. Topics may vary.

Au, Wi, Sp Qtrs. Prereq: 499 and jr standing. Open only to students enrolled in the B.A. Honors Program. Repeatable to a maximum of 6 cr hrs. This is a Progress course. The seminar is a year long companion course to the set of honors courses taken by students enrolled in the B.A. Honors Program during the junior year. Progress grades are assigned for autumn and winter quarters; final grade (A-E) assigned at the end of spring quarter.

### 555 Introduction to International Business U 4

Basic coverage of world trade and investment problems, and introduction to multinational corporation strategies and the various types of environments in which they do business.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H555 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Econ 201 or 400. H555: Open only to students in the Honors Business Administration cohort Program.

### 689 Professional Experience in Business U 0

Students complete a co-op or internship assignment in private industry or for a government agency; assignment is supervised by the employer and monitored and evaluated by the Professional Experience Program.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of the Director of Professional Experience Program. Repeatable. This course is graded S/U.

### 693 Individual Studies U G 1-6

Individual study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 694 Group Studies U G 1-6

Group study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 697 Study at a Foreign Institution U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

### 698 Study Tour U G 1-15

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. Repeatable for different titled study tours only.

#### 698.01 Domestic U G 1-15

Au Qtr. Repeatable.

#### 698.02 Foreign U G 1-15

Repeatable.

### 750 Resolving Social Conflict G 4

A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflict.

Au Qtr. 1 4-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in City and Regional Planning and Natural Resources.

### H783 Honors Research U 1-5

Special topics research in business administration; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This is a Progress course.

### 790 Teaching Business Students G 3

Preparation for business instruction at the undergraduate level; focuses on development of college business teachers through practice-centered inquiry.

Su Qtr. 1 cl. Prereq: Ph.D. student enrolled in College of Business. Limited to 20 students. This course is graded S/U.

### 798 International Business Policy and Strategy U G 4

Analysis and simulation of major policy decisions in the context of international business; emphasis on consideration of international business.

Sp Qtr. 2 2-hr cl. Prereq: Approved application for BSBA in international business, Bus Adm 555, Bus-Fin 725, and Bus-M&L 757; or written permission of instructor.

### 799 Business Policy U G 4

Analysis of policy/strategy management issues in the context of entire firms and their industries, using professional tools and concepts helpful in strategy formulation and implementation.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H799 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Bus-Fin 510 and 620, Bus-Mgt 630, Bus-M&L 650, Bus-MHR 701, and registration for final qtr BSBA program prior to graduation, others by permission of instructor. H799: Open only to students in the Honors Business Administration cohort Program. First class attendance required.

### 856 Introduction to Multinational Business G 4

Introduction to the environment of international business and to the operations of the multinational firm, including an understanding of the dimensions of international trade and investment and their importance to the US economy and business firms.

Au Qtr. 2 2.5-hr cl. arr. field research.

### 857 International Business Policy and Strategy G 4

Comprehensive study of policy and strategy formulation of firms in an international context with simulated cross-cultural negotiations, and the development of an international strategy for a local firm.

Sp Qtr. 2 2.5-hr cl. Prereq: 555 or 856 or equiv.

### 893 Individual Studies G 1-6

Individual study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

### 894 Group Studies G 1-6

Group study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 998 Research in Business Interdisciplinary: Thesis G 1-18

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

### 999 Research in Business Interdisciplinary: Dissertation G 1-18

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Business Administration: Finance

700 Fisher Hall, 2100 Neil Avenue, 292-5026

### 220 Personal Finance U 3

Budgeting, credit, borrowing money, bank relationships, savings, insurance, real estate, stocks and bonds, income taxes, social security, annuities, wills, trusts, estates, and taxes.

Su, Au, Wi Qtrs. Prereq: 2nd yr standing. Not open to students in the College of Business majoring in either accounting or finance.

### 493 Individual Studies U 1-10

Individual study projects in selected areas in finance.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

### 494 Group Studies U 1-10

Group study projects in selected areas in finance.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

### 510 Legal Environment of Business U 4

An introduction to American legal institutions and sources of law and an analysis of basic concepts of public and private law related to business decisions.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H510 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Jr standing. H510: Open only to students in the Honors Business Administration cohort Program.

### 620 Business Finance U G 4

Introduction to financial management of business firms; financial analysis, planning and control; working capital management; capital investment decisions and required rates of return; capital structure decisions and sources of financing.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H620 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Econ 200 and 201, or equivalents; and Acct&MIS 201 or 212 or equiv. H620: Open only to students in the Honors Business Administration cohort Program. This course is available for EM credit.

### 640 Insurance and Risk U G 4

Principles and practices of insurance and risk management, including personal, business, and social viewpoints in regard to insurance for life, health, property, and liability risks.

Au, Sp Qtrs. 2 2-hr cl. Prereq: Econ 200 and 201, or equivalents.

### 670 Real Estate and Urban Land Economics U G 4

Introduction to urban land economics and real estate markets; topics include land use, property taxation, income taxation, and property rights.

Su, Wi Qtrs. 2 2-hr cl. Prereq: Econ 200 and 201, or equivalents.

### 693 Individual Studies U G 1-6

Individual study projects in related areas in finance.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 694 Group Studies U G 1-6

Group study projects in selected areas in finance.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 721 Corporate Finance U G 4

Effects of projects and financial policy on stockholder wealth; capital budgeting, project cost of capital, dividend policy, debt policy, leasing policy, and option pricing.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H721 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 620 or equiv (H620 and 3.4 CPHR required for honors version) and Bus-Mgt 330 and 331; or permission of instructor.

### 722 Special Topics in Investment Management U G 4

Investment objectives; types of investments and their relative merits; security prices and yields; investment programs; and taxes.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 620 or equiv and Bus-Mgt 330 and 331; or permission of instructor.

### 723 Investment Analysis U G 4

Methods of investment analysis; analysis of investment data; principles and standards for selection of specific investment; portfolio management.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 722 or equiv.

### 724 Stock Market U G 5

Practices, procedures, and evaluations relating to buying and selling securities in the organized security markets.

Su, Au, Sp Qtrs. 3 2-hr cl. Prereq: 722 and 3.20 CPHR or permission of instructor.

### 725 International Finance U G 4

The international financial environment; management of financial risks inherent with international business; problems of implementing corporate finance principles overseas; financial aspects of parent-subsidiary relationships.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 620 or equiv and Bus Adm 555 and Bus-Mgt 330 and 331; or permission of instructor.

### 726 Management of Financial Institutions U G 4

Overview of the role of financial institutions; study of asset and liability management in commercial banks and savings institutions; cases and simulation.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 620 and Econ 520 or equivalents, and Bus-Mgt 330 and 331; or permission of instructor.

### 729 Cases in Managerial Finance U G 4

Analysis of qualitative and quantitative financial factors involved in managerial decisions in actual business cases.

2 2-hr cl. Prereq: 721 or equiv.

### 741 Life and Health Risk Management U G 4

Management of risks involving health or death; employee benefit programs for corporations, non-profit organizations, and government institutions; the life and health insurance industry.

Wi Qtr. 2 2-hr cl. Prereq: 640 or equiv, and Bus-Mgt 330 and 331 or equiv; or permission of instructor.

### 749 Property and Liability Risk Management U G 4

Management of risks involving property damage or legal liability for businesses, hospitals, and government institutions; identification of resources for managing these risks.

Sp Qtr. 2 2-hr cl. Prereq: 640 or equiv and Bus-Mgt 330 and 331; or permission of instructor.

### 771 Real Estate Investment Analysis U G 4

Feasibility and market analysis with consideration of property and income taxation and urban land developments.

Au Qtr. 2 2-hr cl. Prereq: 620 or equiv and Bus-Mgt 330 and 331 or equiv; or permission of instructor.

### 772 Real Estate Finance U G 4

Sources and methods of obtaining funds for real estate investment; financial institutions, legal considerations, the construction industry and cycles, and financing policies, practices, and experiences.

Sp Qtr. 2 2-hr cl. Prereq: 620 or equiv and Bus-Mgt 330 and 331 or equiv; or permission of instructor.

### 773 Real Estate Valuation U G 4

Professional valuation as a guide to business decisions; valuation theory and procedures; factors influencing real estate values, and the selection and analysis of data.

Au Qtr. 2 2-hr cl. Prereq: Econ 200 or equiv or permission of instructor.

### 774 Income Property Valuation U G 4

The value-creating attributes of investment properties; methodologies of income-property valuation and investment analysis.

Sp Qtr. 2 2-hr cl. Prereq: Econ 200 or equiv or permission of instructor.

### 775 Real Estate Law U G 4

Legal aspects of real estate transactions and documents (deeds, mortgages, and leases) and selected elements of the law of real estate brokerage.

Wi Qtr. 2 2-hr cl. Prereq: 510 or equiv or permission of instructor.

### H783 Honors Research U 1-5

Special topics research in finance, business law, insurance and risk, and/or real estate; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This is a Progress course.

### 811 Financial Decision Making G 4

Analysis of financial management through case study; financial concepts and techniques and feasible alternatives.

Sp Qtr. Prereq: MBA 810.

### 821 Seminar in Corporate Finance G 4

Conceptual foundations of corporate financial decisions with an emphasis on valuation review and evaluation of selected empirical research in financial economics.

Wi Qtr. 2 2-hr cl. Prereq: MBA 810 or 811, or permission of instructor.

### 822 Security Markets G 4

A critical study of the markets for listed and unlisted securities and the factors influencing security prices.

Au Qtr. 2 1.5-hr cl. Prereq: Permission of instructor.

**823 Special Topics in Investment Management G 4**

In-depth analysis of selected investment topics such as options markets, futures markets, convertible securities, effects of taxes and inflation on interest rates, term structure of interest rates, and modern portfolio theory. Sp Qtr. 2 2-hr cl. Prereq: 822 or permission of instructor.

**824 The Stock Market G 4**

Practices, procedures, and evaluations for managing equity portfolios. Su, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 822.

**825 International Finance G 4**

The international financial environment, management of financial risks inherent with international business; problems of implementation corporate finance principles overseas; financial aspects of parent-subsidiary relationships. Wi, Sp Qtrs. 2 2-hr cl. Prereq: 822 and 823 recommended; permission of instructor for PhD students.

**826 Financial Institutions G 4**

Financial management of commercial banks and savings institutions; review, analysis and evaluation of pertinent literature and research; readings and cases.

Au Qtr. 2 2-hr cl. Prereq: MBA 810 and 811 or permission of instructor.

**827 Treasury and Fixed Income Management G 4**

Forecasting cash flows, short term asset and liability management and long term bond management.

Sp Qtr. 2 2-hr cl. Prereq: 811 and 822 and MBA 810.

**828 Cases in Corporate Finance G 4**

Intensive analysis of case studies to develop the students' abilities to make financial decisions. Applying and integrating ideas learned in MBA 810/811. Sp Qtr. 2 2-hr cl. Prereq: MBA 810 or 811.

**829 Risk Management and Financial Engineering G 4**

Course addresses corporate finance benefits of risk management and tools of risk management. Issues in corporate finance and derivatives pricing.

Sp Qtr. 2 2-hr cl. Prereq: 822 and MBA 810 and 811.

**841^\* Risk Management and Insurance G 4**

Principles of risk management and insurance; overview of insurance coverages and employee benefit programs; and risk management for businesses, hospitals, and government institutions.

2 2-hr cl. Prereq: Permission of instructor.

**843 Risk Management: Property and Liability Risks G 4**

Management of risks involving damage to property and losses imposed by the legal environment and resources for businesses, hospitals, and government institutions to manage these risks.

2 2-hr cl. Prereq: 841.

**845 Risk Management: Benefit Programs G 4**

Management of employee benefit programs for businesses, hospitals, and government institutions; alternatives for funding and claims control; and social insurance systems, including social security.

2 2-hr cl. Prereq: 841.

**868 Contemporary Employment Practices and the Law G 4**

An examination of individual rights in the workplace; unjust discharge, employee privacy rights, and employer liability for intentional injuries; equal employment opportunity law; emphasis on recent legal developments.

Sp Qtr. 2 2-hr cl. Prereq: Bus-MHR 612 or permission of instructor. Not open to students with credit for Bus-Adm 694C or Bus-MHR 868. Cross-listed in Business Administration: Management and Human Resources.

**870 Seminar in Real Estate G 4**

The microeconomics of real estate investment: valuation of properties and leases. Knowledge of spreadsheet strongly advised.

Au Qtr. 2 2-hr cl.

**871 Real Estate Development G 4**

Components of real estate development: residential, shopping centers, offices, apartments, and pure land. Market analysis, financing, feasibility and taxation.

Wi Qtr. 2 2-hr cl.

**872 Real Estate Finance G 4**

Examines real estate as investments. Analysis of the mortgage market, mortgage derivatives, and bond portfolio management when mortgage-backed securities and derivatives are used.

Sp Qtr. 2 2-hr cl.

**873 Urban Real Estate Analysis G 4**

Analysis and administration of urban real estate resources, including property valuation, investment analysis, financing, market analysis of local economies, and legal considerations.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**893 Individual Studies G 1-6**

Individual study projects in related areas in finance.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-6**

Group study projects in selected areas in finance.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**920 Theory of Finance G 5**

Examination of the modern theory of asset pricing and its theoretical foundations.

Au Qtr. 3 2-hr cl. Prereq: Successful completion of Finance Qualifying Exam or permission of instructor.

**921 Specifying and Testing Models of Asset Pricing G 5**

Focuses on applied econometric research on asset pricing; emphasis on understanding the flow of research and methods used in financial research.

Wi Qtr. 3 2-hr cl. Prereq: Successful completion of Finance Qualifying Exam or permission of instructor.

**922 Advanced Theory of Corporate Finance G 5**

Emphasizes developments in corporate financial policies including capital structure, compensation, and dividends; contracting costs and firms' interaction with capital markets.

Sp Qtr. 2 1.5-hr cl. Prereq: 920 and 921.

**923 Research in Finance G 5**

Review and access of the research methodologies of finance, and the development and completion of a research paper.

Au Qtr. 3 2-hr cl. Prereq: 920, 921, and 922 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**998 Research in Finance: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Finance: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Business Administration: Management and Human Resources

700 Fisher Hall, 2100 Neil Avenue, 292-5028

**493 Individual Studies U 1-10**

Individual study projects in selected areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**494 Group Studies U 1-10**

Group study projects in selected areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**651 Human Resource Policy: Conceptual Framework and Issues U G 4**

Theories of the labor market as applied to the analysis of human resource policy issues; education, training, unemployment, poverty, and discrimination.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: Econ 201 or equiv with written permission of instructor.

**652 Human Resource Policy: Legislation and Institutions U G 4**

Critical review of current or proposed legislation and institutions relating to human resource development, maintenance, and utilization.

Wi Qtr. 2 1.5-hr cl. Prereq: 651 or equiv with written permission of instructor.

**653^ Human Resource Planning U G 4**

Survey of concepts and techniques of human resource planning, with special emphasis on projections of human resource requirements.

2 1.5-hr cl. Prereq: 651 or equiv with written permission of instructor.

**660 Introduction to Human Resources Management U G 4**

Principles and practices of recruiting, selecting, developing, compensating, and utilizing effective human resources.

Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: Econ 200 or equiv.

**693 Individual Studies U G 1-6**

Individual study projects in related areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Group study projects in related areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**701 Introduction to Organizational Behavior U G 5**

Introduction to individual and group behavior in organizations; procedures for supporting and strengthening emergent behavior; examination of organizational interaction with environments.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H701 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Jr standing. Not open to students with credit for 500. H701: Open only to students in the Honors Business Administration cohort Program.

**703 Human Resource Training and Development U 4**

Introduction to behavioral concepts and organization practices related to training and developing human resources and organization development. Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 660 or 860 and Bus-Mgt 330; or permission of instructor.

**704 Management Applications in Business U 4**

Application of behavioral science knowledge to managing within the context of business organizations; emphasis on such topics as motivation, supervision, groups, and conflict.

Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 701 and sr standing in BSBA program. Not open to grad students.

**756 Staffing Organizations U 4**

Introduction to the scientific, legal, and administrative issues associated with the recruitment, hiring, and placement of individuals by organizations. Wi Qtr. 2 1.5-hr cl. Prereq: 660.

**761 Collective Bargaining Administration U 4**

Examination of the process of accommodation and rule-making among management, employees, and government relative to their respective goals and strategies, and pertinent legislation and environmental constraints.

Au Qtr. 2 1.5-hr cl. Prereq: 660 or 701 and Bus-Mgt 330; or permission of instructor.

**762 Compensation Administration U 4**

Managerial aspects of motivation and compensation principles and practices for administrative, operative, research, and professional employees in private and public organizations.

Wi Qtr. 2 1.5-hr cl. Prereq: 660 or equiv and Bus-Mgt 330 or equiv; or permission of instructor.

**763 Comparative Labor Movements U G 4**

A comparison of industrial relations practices, history and laws, in Western Europe, Canada, Japan, and the United States.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: Jr or sr or grad standing in BUS, ASC, or LAW and Bus-Mgt 330; or permission of instructor.

**764 Worker-Management Cooperation Initiatives U G 4**

An examination of critical theories, principles, and concepts upon which initiatives such as QWL, QC, ESOP, etc. in union and nonunion environments.

2 1.5-hr cl. Prereq: 612 or 614 or 651 or 761 or 763 or equiv with written permission of instructor.

**765 Comparative Management Systems and Environments U G 4**

A conceptual approach for analyses of cultural norms and values and assessment of their implication for managerial decision-making.

Sp Qtr. 2 2-hr cl. Prereq: Bus-Mgt 330; or permission of instructor.

**769 Cases in Human Resources Management U 4**

Problems and case histories are utilized to develop proficiency in applying principles and developing decision-making abilities in regard to human resources management.

Sp Qtr. 2 2-hr cl. Prereq: 761 or 762 or permission of instructor.

**H783 Honors Research U 1-5**

Special topics research in management and human resources; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in Business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This is a Progress course.

**795 Entrepreneurship**

Entrepreneurship: managing creativity and growth in the new or emerging firm.

1 3-hr cl.

**795.01^ Entrepreneurship-BA U 4**

Prereq: 701, Bus-Fin 510 and 620, Bus-Mgt 630, Bus-Mktg 650. Not open to students with credit for 795 or 795.02.

**795.02^ Entrepreneurship-NB U 4**

Prereq: Sr standing. Open to non-business majors only. Not open to students with credit for 795 or 795.01.

**796^ Analysis and Evaluation of New Enterprise U 4**

Practicum course providing students with the opportunity to apply business concepts in problem situations in new enterprises.

1 1.5-hr cl. Prereq: 795.

**800^ Introduction to Administrative Behavior G 4**

Introduction to behavioral concepts of concern to management; individual, group and organizational behavior.

2 1.5-hr cl. Not open to students with credit for Bus-MHR 701 or structured MBA.

**801 Self-Management, Professional Development and Career Success G 4**

Uses behavior modeling techniques to teach students a variety of interpersonal skills needed by generalist managers.

1 4-hr cl.

**802 Managerial Negotiations G 4**

Exploration of the major concepts and theories of the psychology of bargaining and negotiation, and the dynamics of interpersonal and intergroup conflicts and their resolution.

Wi, Sp Qtrs. 2 2-hr cl.

**803^ Organization Theory and Design G 4**

An examination of the theories and practices involved in the design of formal organizations.

2 1.5-hr cl. Not open to students in structured MBA.

**804 Producing Change in Organizations G 4**

Study of requirements to produce and manage change in organizations.

Sp Qtr. 1 4-hr cl.

**805^ Career Development G 4**

Study of career development within organizations and organizational perspectives.

2 2-hr cl. Prereq: 800 or 860 or MBA 820 or permission of instructor.

**806 Management and Individual Behavior G 4**

Theory and application of the manager's role in dealing with individual employee behavior.

Sp Qtr. 2 2-hr cl.

**807 Organization Development and Change for Human Resources G 4**

A practical and pragmatic investigation into organization development and change principles for improving organization performance.

Wi Qtr. 1 4-hr cl. Prereq: Grad standing. An examination of the foundations of designing organization for performance from a network perspective.

**808 Managing the Diversified Firm G 4**

Explores how firms that start from a relatively disadvantaged position can become and remain the dominant competitors in their industry.

Wi Qtr. 2 2-hr cl. Prereq: MBA 980.

**809 Reengineering the Corporation G 4**

An inquiry into organizational change and reengineering. Explores issues dealing with the design and implementation of systemic organizational change, organizational transformation, organizational learning, and reengineering.

Au Qtr. 2 2-hr cl. Prereq: MBA 860 or 861.

**811 Human Resource Management Research Methods G 4**

Introduction to methods needed to conduct research in management and human resources.

Wi Qtr. 2-hr cl.

**851 Conceptual and Historical Foundations of Labor and Human Resources I G 4**

Appraisal of theories, principles, and concepts related to macro and micro labor and human resources set within historical context.

Au Qtr. 2 2-hr cl. Prereq: Admis to grad programs in labor and human resources or permission of instructor.

**852 Conceptual and Historical Foundations of Labor and Human Resources II G 4**

Examination of macro and micro labor human resources issues and policies set within historical context.

Wi Qtr. 2 1.5-hr cl. Prereq: 851 or permission of instructor.



**853 Human Resource Information Systems G 4**

Examination of the practical and conceptual issues in the development, acquisition, implementation and application of Human Resource Information Systems and other data management techniques.  
Sp Qtr. 2 2-hr cl. Prereq: 811, 867, Bus-Mgt 702.

**854 Seminar in Human Resource Policy G 4**

Theories of the labor market as applied to the analysis of human resource policy issues, training, unemployment, discrimination, immigration, and poverty.

Sp Qtr. 1 3-hr cl. Prereq: 851, or any of two of the following: 652, 653, or 654.

**855 Development of Human Resources G 4**

Study of the processes of human resource development as development as identified in theory, research policy and application, experiential learning, and adult development in organization.

Sp Qtr. 2 2-hr cl. Prereq: 20 cr hrs in related social science courses.

**856 Staffing the Organization G 4**

Examination of the scientific, legal, and administrative issues associated with the recruitment, selection, and placement of individuals by organizations.

Au Qtr. 1 3-hr cl. Prereq: 860 or permission of instructor.

**858 International Human Resources G 4**

Survey of human resource management practices of selected countries. Economics, politics and culture examined to understand the peculiarities of human resource management in each situation.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**859 Business Ethics G 4**

Overview of moral issues in business. Focuses on unethical theories and traditions bearing on these activities.

Sp Qtr. 1 3-hr cl. Prereq: Grad standing.

**860 Management of Human Resources G 4**

Analysis of human resources practice and policies, value configurations, leadership, job design, motivation, and reward systems as these relate to individual performance and organizational effectiveness.

Wi Qtr. 2 1.25-hr cl. Not open to students with credit for 860 or H660.

**861 Seminar in Union Management Issues G 4**

Examination of such issues as bargaining and conflict resolution processes, grievance handling and arbitration, white-collar unionism, productivity, quality of worklife, safety and health, and flextime.

Su Qtr. 1 2.5-hr cl. Prereq: 860 or equiv, or permission of instructor.

**862 Seminar in Human Resource Management G 4**

Theory and problems involved in selecting, developing, retaining, motivating, utilizing, and allocating human resources within complex organizations.

Au Qtr. 1 2.5-hr cl. Prereq: 860 or equiv with permission of instructor.

**863 Business Practices and the Human Resource Manager G 4**

Introduction to business practices for the human resource practitioner.

Au Qtr. 1 3-hr cl. Prereq: Grad standing in the MLHR program. Previously offered as Bus-MHR 894B.

**864 Labor Dispute Settlement G 4**

Analysis of the functional role of labor conflict in the industrial relations system; evaluation of institutions for dispute resolution in the public and private sectors.

1 2-hr cl. Prereq: 761 or 861.

**865 Compensation Theory and Practice G 4**

Introduction to pay systems; including job evaluation, pay surveys, performance appraisals, and benefits.

Sp Qtr. Prereq: 660, 860, or equiv and Bus-Mgt 330 or equiv. Not open to students with credit for 762.

**867 Statistical Analysis for Labor and Human Resources Management II G 4**

Second quarter of a sequence preparing students to analyze and use Human Resource data in decision-making, focusing on hierarchical regression, moderated regression, ANOVA with multiple independent variables, non-parametric analysis.

Wi Qtr. 1 3-hr cl and lab projects. Prereq: Bus:Mgmt Sci 702 or equiv or permission of instructor.

**868 Contemporary Employment Practices and the Law G 4**

Title VII of the 1964 Civil Rights Act, The Equal Pay Act, the Age Discrimination in Employment Act, the Civil Rights Act of 1967, and federal affirmative action program are discussed.

Wi Qtr. 2 2-hr cl. Prereq: 612 or permission of instructor. Not open to students with credit for Bus-Fin 866. Cross-listed in Business Administration: Finance.

**893 Individual Studies G 1-6**

Individual study projects in related areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-6**

Group study projects in related areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**895 Seminar in Entrepreneurship**

Lecture, discussion, and case analysis on managing growth in the new or emerging firm.

2 cl.

**895.01 Seminar in Entrepreneurship-BA G 4**

Au Qtr. Prereq: BA core and permission of instructor. Not open to students with credit for 895 or 895.02.

**895.02 Seminar in Entrepreneurship-NB G 4**

Open to non-business graduate students only. Not open to students with credit for 895 or 895.01.

**911 Introduction to Behavioral Research Methods in Business G 5**

Introduction to research design and methodology as it relates to the study of business and organizational phenomena.

Au Qtr. 1 5-hr cl.

**912 Advanced Analysis of Organizational Research G 5**

Analysis and comparison of relevant business and organizational theories through an in-depth consideration of research design, methods, and analysis and the development of student-originated research proposals.

1 5-hr cl.

**913 Individual Behavior in Formal Organizations G 5**

Advanced discussions of theory and research on individual behavior, motivation, decision-making, job design, and reward system as they relate to individual and organizational performance.

1 5-hr cl.

**914 Work Groups in Formal Organizations G 5**

Theory and research on formal and informal structures in work groups and their influence on productivity and management.

1 5-hr cl.

**915 Advanced Formal Organization Theory G 5**

Theory and research on the structural characteristics of formal organizations with particular emphasis on the management of the organization as a dynamic system.

1 5-hr cl.

**916 History of Macro-Organizational Behavior G 5**

Development of theory, research, and thought in macro-organizational behavior.

Au Qtr. 1 5-hr cl.

**917 Seminar in Organizational Behavior G 5**

A critical study of current research problems and trends in organizational behavior; builds on the concepts, models, and perspectives developed in 913, 914, and 915.

1 5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**918 Seminar in Integrative Organizational Behavior Research G 2**

Continuing seminar for integration of organizational behavior concepts.

Prereq: Enrollment in the organizational behavior area of the Bus Adm PhD program. This course is graded S/U.

**919 Theoretical Foundations of Organizational Thought G 4**

Seminar in the historical evolution of concepts, models, and perspectives in organizational behavior and the practice of management.

1 3-hr cl. Prereq: Permission of instructor.

**920 Seminar in Strategic Management G 5**

An examination of the concepts, models, theories, and research underlying contemporary thinking on strategic management.

1 5-hr cl. Prereq: Permission of instructor.

**925 Seminar in International Business and Organization Theory G 5**

A critical study of current research methodologies and findings in the field of international business.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**950 Advanced Experience in Labor and Human Resources**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 12 cr hrs in Bus-MHR.

**950.01 Internship G 1-6**

Supervised practical experience relating to labor and human resources in public or private establishments, Center for Human Resource Research, Labor Education and Research Service, or under a faculty member.

**950.02 Tutorial G 1-6**

Preparation of investigative paper relating course work to specific problem in industrial relations or human resource policy.

**951 Advanced Seminar in Human Resource Policy G 5**

Selected issues in human resource policy at federal, state, and local government levels.

Au Qtr. 1 5-hr cl.

**952 Advanced Seminar in Unionism and Collective Bargaining G 4**

Selected issues in unionism and collective bargaining.

2 2-hr cl. Prereq: 613 and 761 or equivs, or permission of instructor

**956 Seminar in Staffing P G 5**

Examination of theory and research on staffing in complex organizations.

1 5-hr cl. Prereq: One course in stat or permission of instructor.

**960 Seminar in Industrial Relations Thought G 4**

A consideration of industrial relations thought in terms of its historical and theoretical evolution in private and public sectors.

1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**961 Seminar in Industrial Relations Research G 4**

A consideration of relevant industrial relations research and methodology, and individual development of research projects in private and public sectors.

1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**963 Seminar in Training and Development G 4**

Examination of theory and research on training and development in complex organizations.

1 3-hr cl. Prereq: One course in stat or permission of instructor.

**965 Seminar in Compensation G 5**

Examination of theory and research on compensation administration in complex organizations.

1 5-hr cl. Prereq: One course in stat or permission of instructor.

**998 Research in Labor and Human Resources: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 12 cr hrs in BUS-MHR at 800 level or above. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**999 Research in Labor and Human Resources: Dissertation G 1-15**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Business Administration: Management Sciences

600 Fisher Hall, 2100 Neil Avenue, 292-1275

**330 Decision Sciences: Statistical Techniques U 5**

Examination of the use of statistical techniques in managerial decision-making processes; confidence intervals, hypothesis testing, simple and multiple regression, quality control.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Cptr/Inf 200 and Stat 133 or equiv.

**331 Decision Sciences: Operations Research, Modeling and Applications U 4**

Examination of the use of operations research models in managerial decision making processes: linear programming, decision analysis and simulation applications. Emphasis on formulation and interpretation of models; supported by spreadsheet based software.

Su, Au, Wi, Sp Qtrs. 2-2-hr cl. Prereq: Cptr/Inf 200 and Stat 133 or equiv.

**493 Individual Studies U 1-10**

Individual study projects in selected areas in management sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**494 Group Studies U 1-10**

Group study projects in selected areas in management sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**601 Business Statistics U G 4**

Applications of statistical techniques to the analysis of business and economic data.

Wi Qtr. 2 2-hr cl. Not open to students with credit for 330.

**630 Introduction to Operations Management: Improving Competitiveness in Organizations U G 4**

Key operating issues in service and manufacturing organizations that have strategic and tactical implications. Students participate in discussions relating current business events to operations management and case analysis.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H630 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Jr standing. H630: Open only to students in the Honors Business Administration cohort Program.

**693 Individual Studies U G 1-6**

Individual study projects in selected areas in management sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Group study projects in selected areas in management sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**731 Operations Strategy and Design U G 4**

An analysis of the strategic implications of operations management decision making and issues involved in designing a productive system; topics include facility location and layout, capacity management, quality management, and the management of technology.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 330, 331, and 630; or permission of instructor.

**732 Operations Planning and Control U G 4**

An analysis of the planning and control of materials as they flow within an organization; topics include production planning, material requirements planning (MRP), capacity management, master production scheduling, and just-in-time techniques.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 330, 331, and 630; or permission of instructor.

**733 Information Systems in Operation Management U G 4**

A study of the impact that information systems have on strategic and tactical decisions of operations managers; emphasis on applying decision support systems to problems faced by these managers.

Sp Qtr. 2 2-hr cl. Prereq: 630 and a course in computer programming, or permission of instructor.

**734 Service Operations Management U G 4**

Study of service industry and processes from an operations management perspective.

2 2-hr cl. Prereq: 330, 331, and 630.

**735 Purchasing and Materials Management U G 4**

Explores the industrial-institutional purchasing cycle for operating supplies, raw materials components and capital equipment within the context of the materials management organization concept.

Au Qtr. 2 2-hr cl. Prereq: 630 and Bus-Mktg 650.

**736 Purchasing Strategy U G 4**

Focus on the importance of developing an integrated purchasing management strategy which is consistent and congruent with the business firm's strategy. Purchasing is viewed as a competitive tool.

Wi Qtr. 2 2-hr cl. Prereq: 330, 331, and 630.

**737 International Operations Management U G 4**

This course focuses on managing manufacturing and service operations across national boundaries to provide an organization with a competitive advantage.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 630 or permission of instructor.

**739 Managing Process Improvement U G 4**

Examines process reengineering and quality management for manufacturing and service organizations. Topics covered include process flow and waiting line analysis, quality by design, service/quality guarantees, team problem solving tools, Malcolm Baldrige National Quality Award criteria and statistical process control.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 330, 331, and 630; or permission of instructor.

**H783 Honors Research U 1-5**

Special topics research in management sciences; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This is a Progress course.

**801 Quantitative Methods in Business**

Derivation and application of analytical, mathematical, and statistical techniques to the solution of recurring management problems.

2 1.5-hr cl. Prereq: Stat 133 or equiv or permission of instructor.

**801.01^ Business Data Modeling I G 3,4**

Introduction to quantitative management techniques for first year doctoral candidates in business administration.

Prereq: Math 503 and grad standing in BUS or permission of instructor.

**801.02^ Business Data Modeling II G 4**

Continuation of 801.01 with emphasis on stochastic modeling techniques.

Prereq: 801.01.

**801.03^ Business Data Modeling III G 4**

Emphasis on deterministic modeling techniques for business management problem solving.

Prereq: 801.01. Repeatable to a maximum of 12 cr hrs.

**808 Strategic Decision Making P G 4**

Study decisions made by organizations to discover common problems and provide skills that overcome these difficulties.

2 2-hr cl. Prereq: MBA 870 or permission of instructor.

**830 Service/Quality Management G 4**

Study of the strategic and tactical issues concerning services in both service and manufacturing industries. Topics include service process re-engineering, performance measurement, service/quality, standards, and employee empowerment.

Sp Qtr. 2 2-hr cl. Prereq: MBA 850 or permission of instructor.

**832 Operations Management Information Systems G 4**

Examination of major issues in planning and scheduling in an information systems context; production database, requirements planning, and scheduling processing; decision support systems in operations management and computerized manufacturing systems.

Sp Qtr. 2 2-hr cl.

**834 Strategic Design of Operations/Logistics Systems G 4**

Managing systems of people and technology to create capabilities in operations. Emphasis is on new approaches to managing operations and logistics that promise strategic advantage.

Wi Qtr. 2 2-hr cl. Prereq: MBA 850 or 851, and 870; or permission of instructor.

**835 Operations Planning and Materials Management G 4**

The major responsibilities of materials managers; including aggregate planning and master scheduling, inventory management, and scheduling; major issues and strategies including tactical purchasing methods, techniques for analysis, and Japanese manufacturing philosophies will be discussed.

Au Qtr. 2 1.5-hr cl. Prereq: MBA 850 or 851, and 871; or permission of instructor.

**836 Customer Driven Manufacturing in the Global Market G 4**

Development of effective linkages between the marketing and manufacturing functions in strategic planning for a business; application to case studies involving U.S. and overseas firms.

Au Qtr. 2 2-hr cl. Lecture, case discussion, projects. Prereq: 2nd yr standing in MBA or permission of instructor.

**875 Quality Management G 4**

Principles of quality management with emphasis on manufacturing firms; topics include managerial philosophy, essential technical tools, quality audits, vendor certification, and quality costs.

Wi Qtr. 2 2-hr cl. Prereq: MBA 850 or MBA 851, and MBA 870.

**893 Individual Studies G 1-6**

Individual study projects in selected areas in management sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-6**

Group study projects in selected areas in management sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**901 Seminar in Management Science G 4**

Consideration of advanced topics in management science with an emphasis on quantitative analysis.

2 2-hr cl. Prereq: Mgt Sci 801.02 and 801.03 and permission of instructor.

**929 Current Research in Operations Management G 5**

A series of weekly lectures and seminar discussions on current research topics in operations management.

Au Qtr. 1 5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**930 Special Topics in Operations Management G 5**

A critical study of selected topics in operations management focusing on the status of research efforts to date; topics vary.

Wi Qtr. 1 5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**931 Seminar in Operations Management G 5**

A critical review of the literature in the field of operations management; in odd-numbered years, the review covers the process design, location, and layout areas while the production planning and control topics are covered in even-numbered years.

Sp Qtr. 1 5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**998 Research in Management Sciences: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research in Management Sciences: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Business Administration: Marketing & Logistics

500 Fisher Hall, 2100 Neil Avenue, 292-8808

700-level courses are not available for graduate credit if taught by a graduate instructor. Please check Master Schedule for limitation codes.

**493 Individual Studies U 1-10**

Individual study projects in selected areas in marketing.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**494 Group Studies U 1-10**

Group study projects in selected areas in marketing.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**650 Marketing U G 4**

Critical survey of field of marketing; structure, functions, policies, costs, and problems analyzed from consumer and other viewpoints; emphasis on principles, trends, and quantitative expression.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H650 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Econ 200 or equiv. H650: Open only to students in the Honors Business Administration cohort Program.

**693 Individual Studies U G 1-6**

Individual study projects in related areas in marketing.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Group study projects in selected areas in marketing.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**750 Consumer Behavior U G 4**

A review and synthesis of behavioral sciences applied to understanding consumer decision process; emphasis on the impact of consumer decisions upon the strategies of business, government, and consumer business cases.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv.

**751 Managerial Marketing U G 4**

Marketing policies and strategy; organization, demand analysis, product planning, pricing, physical distribution, and promotion from a managerial viewpoint.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv; and 758 or 758 concurrent with permission.

**752 Cases in Managerial Marketing U G 4**

Analysis of marketing policies and strategy, with emphasis on actual business cases.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 751.

**753 Retail Management U G 4**

Principles and methods of management as applied to retailing, including location, organization, personnel, buying, inventory control, selling and advertising, services, expenses, and profits.

Su, Au, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv.

**755 Promotional Strategy U G 4**

Consumer behavior, fundamentals of communication, setting goals and objectives, creative strategy, media strategy, and social and economic issues.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv.

**757 International Marketing U G 4**

Theory and practice of marketing across national borders, as well as marketing and market research within different foreign environments, including the development of marketing strategies by the international company.

Au, Sp Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Adm 555 and Bus-Mgt 330 and 331; or permission of instructor.

**758 Marketing Research U G 4**

The role of research in the solution of marketing problems; emphasis on available data analysis and methods of the field of investigation.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Mgt 330 and 331.

**759 Sales Management U G 4**

The sales force and its managerial hierarchy.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 650.

**780 Micro-Logistics U G 4**

Management of logistics activities of the firm from the viewpoint of both the provider and user of logistics system components.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Mgt 330 and 331; or permission of instructor.

**781 Analysis and Design of Logistics Systems U G 4**

Analysis of internal and environmental factors affecting logistics systems and the effect of such factors on the development and implementation of integrated logistics systems.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 780 and Bus-Mgt 330 and 331; or permission of instructor.

**782 Logistics Decision Making U G 4**

Analysis of decision making in the current logistics environment and the tools needed for finding solutions to logistics problems such as inventory, transportation, and warehouse management.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 780 and Cptr/Inf 200.

**H783 Honors Research U 1-5**

Special topics research in marketing and/or transportation and logistics; research evaluated through papers, thesis, and/or special examinations. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This is a Progress course.

**784 Principles of Transportation U G 4**

Study of general economic characteristics and government regulation of rail, motor, water, air, and pipeline carriers; consideration of competitive relations between modes of transportation, basic aspects of traffic management.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Econ 200 or equiv.

**807 Principles and Techniques of Marketing Research G 4**

Comprehensive study of marketing research process and value of research to managers; design and execution of industry-sponsored project.

2 2-hr cl. Prereq: 840.

**843 Services Marketing G 4**

Designed to equip students to become more effective executives of service organizations as well as more enlightened customers of service firms.

Wi Qtr. 2 2-hr cl. Prereq: 840 or permission of instructor. Open only to MBA students or permission of instructor.

**844 Applied Marketing Planning G 4**

Basic, practical elements of integrated strategic planning, current, and future planning techniques.

Sp Qtr. 2 2-hr cl. Prereq: MBA 840 or equivalent other coursework with permission of instructor.

**845 International Marketing Strategy G 4**

Analysis of strategic, political, and philosophical issues faced by management and governments involved in international trade; emphasis on case analysis.

Sp Qtr. 2 2-hr cl. Prereq: MBA 840 or permission of instructor.

**846 Advertising and Promotion Management G 4**

Discussion of specific consumer behavior theories that deal with consumer response to advertising and sales promotion tactics application of these theories in practice.

Wi Qtr. 2 2-hr cl. Prereq: MBA 840 or permission of instructor. Limited to MBA students.

**847 Analysis for Marketing Decisions G 4**

Exploration of issues related to data analysis for marketing decisions: costs/benefits of analysis in aggregate; difference between descriptive and structural models; complexities of imperfect information.

Au Qtr. 2 2-hr cl. Prereq: MBA 840 or permission of instructor.

**848 Building Business Relationships G 4**

Exploration of a diversity of factors and actions that drive successful business relationships, and in turn lead to higher customer satisfaction, market share, and profits.

Au Qtr. 2 2-hr cl. Prereq: MBA 840 or permission of instructor.

**852 Seminar in Specialized Areas of Marketing**

Prereq: 650 or equiv; and permission of instructor.

**852.06 Channels of Distribution G 1-5**

Sp Qtr.

**852.07 Marketing Theory G 1-5****852.08 Logistics G 1-5**

Wi Qtr.

**852.09 Consumer Research G 1-5**

Repeatable to a maximum of 10 cr hrs.

A-Research Design in Consumer Behavior

B-Consumer Behavior Theory

C-Consumer Decision Making

**854 Consumer Behavior G 4**

Development of the consumer decision process and its application to marketing strategy decisions.

Sp Qtr. 2 2-hr cl. Prereq: MBA 840 or permission of instructor.

**858\*\* Multivariate Analysis in Business Research G 4**

Advanced consideration of correlational data analysis techniques (regression, discriminant analysis, factor analysis, canonical analysis); emphasis on comparison of techniques and underlying theory and assumptions.

2 3-hr cl. Prereq: 801.01, 801.02, and Stat 625, or permission of instructor.

**880 Logistics Management G 4**

Management of movement services and coordination of demand and supply patterns for optimization of physical systems in terms of cost and customer service.

Au, Sp Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Mgt 630, or equivs.

**881 Analysis and Design of Logistics Systems G 4**

General logistics problems and solutions including: demand forecasting approaches and techniques; inventory control and deployment; facility location and network design; vehicle scheduling and dispatching algorithms.

Wi Qtr. 2 2-hr cl. Prereq: 880.

**884 Field Problems in Logistics G 4**

Provide students with supervised opportunity to test their problem solving skills on an actual business problem through developing, executing and evaluating a research design.

Wi Qtr. 2 2-hr cl. Prereq: 2nd yr standing in the MBA Program.

**885 Supply Chain Management G 4**

Analysis and evaluation of emerging patterns of industry behavior illustrative of supply chain management; strategic foundations that support supply chain strategy and operational skills required.

Au Qtr. 2 2-hr cl. Prereq: 880.

**889 Theory of Business Logistics G 4**

Critical examination of various theories of the structure and operation of logistics systems; research methodology for testing logistics theory and the application of logistics theory to contemporary logistics problems.

Sp Qtr. 2 2-hr cl.

**893 Individual Studies G 1-6**

Individual study projects in related areas of marketing.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-6**

Group study projects in selected areas in marketing.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**950\* Seminar in Logistics and Distribution Channels G 5**

Critical examination of the role of logistics and distribution channel systems in micro- and macro-marketing systems.

Wi Qtr. Prereq: 850 or equiv.

**951 Marketing Models G 5**

A study of recent model-based research in the marketing literature; emphasis on the strengths and weaknesses of various modeling approaches in specific problem areas and evaluation of model-based research.

Au Qtr. Prereq: 959 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**954 Recent Advancements in Marketing Research G 5**

Provide students with exposure to leading marketing scholars and their most current research and give them an opportunity to critically evaluate it.

Sp Qtr. 1 2-hr cl. Open only to doctoral students in marketing. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**955\*\* Seminar in Contemporary Marketing Problems G 5**

Review of current periodical literature and individual investigation by each student of a selected marketing problem of contemporary significance for seminar discussion and written report.

Au Qtr. Prereq: 950 or equiv. Repeatable to a maximum of 10 cr hrs.

**959\*\* Foundations of Marketing Thought G 5**

An analysis and evaluation of the evolution of marketing thought in a mass production/mass consumption context; a consideration of interdisciplinary relationships and contemporary theoretical insights.

Au Qtr. 1 5-hr cl. Prereq: 850 or equiv.

**998 Research in Marketing: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research in Marketing: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Chemical Engineering

121 Koffolt Laboratories, 140 West 19th Avenue, 292-6591

**200 Chemical Engineering and Process Calculations U 3**

The application of physico-chemical principles to problems of the chemical industry; emphasis on graphical methods, stoichiometry, heat, and material balances.

Au, Wi Qtrs. 2 cl, 2 comp lab hrs. Prereq: Chem 123 and En Graph and a minimum CPHR of 2.00, and prereq or concur: Math 254 and Physics 131.

**201 Chemical Engineering and Process Calculations U 3**

Continuation of 200.

Wi, Sp Qtrs. 2 cl, 2 comp lab hrs. Prereq: 200 and prereq or concur: Math 255 and Physics 132.

**294 Group Studies U 1-6**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**420 Elements of Chemical Engineering-Transport Phenomena I U 4**

Introduction to momentum, mass, and heat transfer with emphasis on the analogies between them; practical applications of momentum transfer (fluid flow).

Sp Qtr. 3 cl, 2 comp lab hrs. Prereq: 201, Math 255, and Physics 132, or equivs with written permission of instructor.

**489 Professional Practice in Industry U 2**

Preparation of a comprehensive report based on employment experience in a co-op job in industry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to co-op program in chem eng. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**508 Chemical Engineering Thermodynamics I U G 3**

Application of the fundamental concepts and laws of thermodynamics to problems of the chemical industry; stress on computational problem work.

Au Qtr. 2 cl, 2 comp lab hrs. Prereq: 201 and 420.

**509 Chemical Engineering Thermodynamics II U G 3**

Continuation of 508.

Wi Qtr. 2 cl, 2 comp lab hrs. Prereq: 508.

**520 Transport Phenomena U G 3**

Momentum, mass, and heat transfer with emphasis on the analogies between them; practical applications of momentum transfer (fluid flow).

Sp Qtr. 3 cl. Prereq: Math 255. Not open to students with credit for 420.

**521 Elements of Chemical Engineering-Transport Phenomena II U G 3**

Continuation of transport theory with emphasis on heat transfer and introduction to radiation; basic principles developed and illustrated with problems from chemical engineering practice.

Au Qtr. 2 cl, 2 comp lab hrs. Prereq: 420 or 520, and a second writing course; and prereq or concur: Math 512 or equiv with permission of instructor. GEC course.

**522 Elements of Chemical Engineering-Transport Phenomena III U G 3**

Continuation of the study of transport theory; emphasis on mass transfer and stagewise operations with applied computational problems.

Wi Qtr. 2 cl, 2 comp lab hrs. Prereq: 521.

**523 Chemical Engineering Operations U G 4**

The application of transport phenomena such as fluid, heat, and mass transfer to the chemical engineering operations of evaporation, distillation, drying, etc.

Sp Qtr. 3 cl, 2 comp lab hrs. Prereq: 522 and Chem 532.

**610 Chemical Engineering Kinetics U G 3**

Chemical and engineering principles for the design and operation of chemical reactors; kinetics of simple homogeneous systems and introduction to heterogeneous catalysis.

Sp Qtr. 2 cl, 2 comp lab hrs Prereq: 509, 522 or Chem 532.

**624 Chemical Process Dynamics and Control I U G 3**

Study of the dynamics and control of chemical processes; mathematical models of simple processes, including feedback control, are derived, analyzed, and simulated.

Au Qtr. 3 cl. Prereq: 523, 610, 630 and Math 512.

**626 Digital Control Techniques in Chemical Engineering U G 3**

Study of real-time data acquisition and digital control techniques as applied to chemical processes.

Sp Qtr. 2 cl, 3 lab hrs. Prereq: 624 and En Graph 200, or permission of instructor.

**630 Chemical Engineering Operations Laboratory U G 4-8**

The fundamental laboratory course in the chemical engineering operations; laboratory investigation of the operating characteristics and efficiency of chemical engineering equipment such as distillation, drying, filtration, etc.

Su Qtr. 5 conf, 7-19 lab hrs. Prereq: 523 or equiv with written permission of instructor. GEC course

**693 Individual Studies in Chemical Engineering U G 1-8**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies in Chemical Engineering U G 1-6**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**712 Catalysis and Catalytic Processes U G 3**

Kinetics of catalytic processes, mass transfer in catalysis, catalyst preparation and characterization, deactivation of catalysts, catalytic reactors, and application of catalytic phenomena in industrial processes.

Sp Qtr. 3 cl. Prereq: 522 and 610.

**717 Colloids and Surfaces U G 3**

Introduction to various aspects of colloids and surfaces, including sedimentation, diffusion, thermodynamics, light scattering, surface tension, contact angle, and surfactants.

Su, Au Qtrs. 32-hr cl. Prereq: Math 255, Chem 253, Chem 531 or Chem Eng 509.

**726 Chemical Process Dynamics and Control II U G 3**

Further development of process dynamics and control topics begun in 624.

Sp Qtr. 3-hr cl. Prereq: 624 or permission of instructor.

**733 Novel Separation Processes U G 3**

Provides further depth beyond 523 in the area of separations applied to chemical processing and introduces some novel techniques that are at the leading edge of separations research.

Su, Sp Qtrs. 3 cl. Prereq: 509, 523 or grad standing, or permission of instructor.

**739 Knowledge-Based Systems in Engineering U G 3**

Application of knowledge-based system principles to engineering problems including practical knowledge engineering, techniques for problem assessment, and implementation.

Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: Cptr/Inf 630 or permission of instructor. Cross-listed in Computer and Information Science; Civil, Mechanical, and Nuclear Engineering.

**750 Profession of Chemical Engineering U 0-1**

The roles in professional activities performed by chemical engineers, code of ethics, professional registration, professional societies, responsibilities to management and to labor and as an administrator.

Sp Qtr. 1-hr cl. Prereq: Jr standing. Repeatable to a maximum of 2 or hrs. This is a Progress course. Progress graded Sp Qtr, credit/grade awarded upon completion of Au Qtr.

**760 Chemical Engineering Economy and Strategy U G 4**

Economic and strategy considerations in research; development, design, and manufacturing in the chemical process industry; cost estimation and economic optimization of chemical engineering operations and chemical processes.

Au Qtr. 3 cl. 1 recitation. Prereq: 610 and 630. GEC course.

**761 Chemical Engineering Processes U G 3**

Integration of fundamentals of chemistry, chemical engineering operations, thermodynamics, reaction kinetics, and economics for optimum design and operation of chemical process plants.

Au Qtr. 2 cl, 2 comp lab hrs. Prereq: Sr standing in chem eng or chem.

**762 Chemical Engineering Process Development U G 4**

Library, laboratory, and pilot plant research and development of chemical processes of industrial potential justified by preliminary economic studies; preparation of optimum process flow sheets; plant design studies.

Sp Qtr. 1 cl 11 lab hrs. Prereq: 610, 630, and prereq or concur: 760. GEC course.

**763 Special Problems in Process Design U 2**

Analysis of definite problems having theoretical and practical application to the chemical industry; individual effort guided by a chemical engineering staff member.

Wi Qtr. 6 hrs conf and lab. Prereq or concur: 760.

**764 Chemical Engineering Process Design U G 4**

Process design studies on selected chemical processes encompassing a broad spectrum of fundamental engineering principles; optimization studies utilizing economic and technical simulation.

Wi Qtr. 2 cl, 2 4-hr labs. GEC course.

**765 Principles of Biochemical Engineering U G 3**

The application of biochemical engineering principles for modern bioprocesses and in the area of industrial biotechnology.

Au Qtr. 2 1.5-hr cl. Prereq: 523, 610, or grad standing or permission of instructor. Not open to students with credit for 666.

**766 Biotechnology and Bioprocess Engineering U G 3**

Fundamentals of biotechnology and their applications to bioprocessing with emphasis on fermentation and bioseparation.

Wi Qtr. 3 1-hr cl. Prereq: 765 or BioChem 511 or Microbiol 520 or equiv, or permission of instructor. Continuation of Chem Eng 666.

**771 Air Pollution U G 3**

Sources of air pollutants, properties of small particles, chemistry of air pollution, dispersion and deposition of air pollutants, and air pollution control.

Sp Qtr. 3 cl. Prereq: ENG sr standing or permission of instructor.

**773 Introduction to High Polymer Engineering U G 3**

Engineering of polymerization and polymer forming processes based upon thermodynamics, transport phenomena, and reaction kinetics; relationships of engineering properties of high polymers to molecular characteristics.

Au Qtr. 3-hr cl. Prereq: 610 and organic chem or permission of instructor.

**775 Rheology of Fluids U G 3**

Principles of rheology including the characteristics of non-Newtonian materials, rheological equations of state, viscometric flows, measurements and applications to the flow of industrial materials.

Sp Qtr. 3 cl. Prereq: 420 or 520 or equiv with written permission of instructor.

**776 Principles of Polymer Conversion Operations U G 3**

Principles of thermodynamics, transport phenomena, polymer chemistry and physics will be related to polymer processing (converting high polymers) through application of mathematical and analytical approaches.

Wi Qtr. 3 cl. Prereq: 773 or permission of instructor.

**779 Chemical Engineering Experimental Design U G 3**

Industrial and research experiments designed with special emphasis on reducing the number of experiments, interpreting final results, and ensuring against unknown factors.

Su, Au Qtrs. 3 cl. Prereq: En Graph 167 or equiv or permission of instructor.

**781 Chemical Engineering Optimization U G 3**

Description, analysis, and comparison of the techniques in use in unimodal optimization; linear programming; geometric programming.

Sp Qtr. 3 cl. Prereq: En Graph 167 or equiv or permission of instructor.

**H783 Undergraduate Honors Program Research U 1-3**

Opportunity for honors students to pursue independent project/research. Thesis writing and oral presentations included.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Sr standing in chem eng. GPA of at least 3.4 and permission of instructor. Repeatable to a maximum of 9 or hrs.

**790 Process Modeling and Simulation U G 3**

Application of basic chemical engineering principles to construct mathematical models of industrial processes and the simulation thereof by digital and analog techniques.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**801 Advanced Special Problems in Chemical Engineering G 1-15**

A minor problems course covering the chemical engineering operation, instrumentation, thermodynamics, kinetics, the transport fields, and chemical technology.

Su, Au, Wi, Sp Qtrs. Conf, library, and/or lab. Prereq: Satisfactory courses in field of problem undertaken and permission of instructor. Repeatable to a maximum of 15 or hrs.

**808 Advanced Chemical Engineering Thermodynamics I G 3**

Detailed discussion of the thermodynamic properties of pure compounds and mixtures; computational problem work emphasizes the application of thermodynamics in industrial problems.

Sp Qtr. 3 cl. Prereq: 509 or equiv with written permission of instructor.

**812 Advanced Chemical Engineering Kinetics I G 3**

Chemical engineering kinetics from the viewpoint of industrial chemical processes.

Au Qtr. 3 cl. Prereq: 523 and 610; or permission of instructor.

**813 Advanced Chemical Engineering Kinetics II G 3**

Continuation of 812.

Wi Qtr. 3 cl. Prereq: 812.

**815 Advanced Chemical Engineering Science and Applications**

Advanced concepts of science and engineering as applied to the chemical engineering field under various topics.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Chem eng grad standing or permission of instructor. Repeatable to a maximum of 45 or hrs. Subdivisions are not repeatable.

**815.01 Advanced Mass Transfer-I G 3**

Repeatable.

**815.05 Advanced Heat Transfer-I G 3**

Conduction, radiation, and convection.

**815.08 Advanced Momentum Transfer-I G 3**

Basic theory, laminar flow, and phenomenological turbulence.

**815.09 Advanced Momentum Transfer-II G 3**

Turbulence, mixing, and chemical reaction.

**815.15 New or Unusual Chemical Engineering Operations G 3**

Examples: adsorption, atmolysis, dialysis exclusion, sublimation.

**881 Seminar in Chemical Engineering G 3**

Formal reports, lectures, and discussions of fundamentals and new developments in science and technology as related to chemical engineering.

Su, Sp Qtrs. 3 conf hrs. Prereq: Grad standing in chem eng. Repeatable to a maximum of 12 or hrs.

**899 Teaching Practicum in Chemical Engineering G 1-6**

Teaching and instructional development under faculty guidance in the chemical engineering curriculum.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing. International students for whom English is not the first language must first become certified by passing English 105 and the mock-teaching test. Repeatable to a maximum of 20 or hrs. Provides teacher training and evaluation that is recognized on transcript. This course is graded S/U.

**951 Research Seminar in Chemical Engineering G 2**

Formal reports, lectures, and discussions of research topics in chemical engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in chem eng.

**999 Research in Chemical Engineering G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Chemical Physics

018 Celeste Laboratory, 120 West 18th Avenue, 292-2569

### 894 Group Studies G 1-5

Group studies on special topics in chemical physics.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Varies with the topic. Repeatable to a maximum of 15 or hrs.

### 999 Research in Chemical Physics: Dissertation G 1-18

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable. This course is graded S/U.

## Chemistry

Undergraduate Chemistry Office: 100 Celeste Laboratory of Chemistry, 120 West 18th Avenue, 292-1204

Graduate Chemistry Office: 1110 Newman-Wolfrom Laboratory of Chemistry, 100 West 18th Avenue, 292-8917.

### 100<sup>A</sup> Chemistry and Society U 5

Terminology, methods, and principles of chemistry; examination of the roles of chemistry in our modern technological society.

Au, Sp Qtrs. 5 cl. Prereq: Math 075 or 076 or 102 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 101, 121, H201, or 204 or chem courses having these as prereqs.

### 101 Elementary Chemistry U 5

Introductory general chemistry for non-science majors, including dimensional analysis, atomic structure, bonding, chemical reactions, states of matter, solutions, chemical equilibrium, and acids and bases.

Su, Au, Wi, Sp Qtrs. 4 cl, 3 lab hrs. Prereq: Eligibility to enroll in Math 116. Not open to students with credit for 121, H201, or 204. Safety glasses must be worn in lab. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

### 102 Elementary Chemistry U 5

Introductory organic and biological chemistry, including saturated and unsaturated hydrocarbons, alcohols, ethers, aldehydes, ketones, carboxylic acids, esters, amines, stereoisomerism, carbohydrates, lipids, proteins, and nucleic acids.

Au, Wi, Sp Qtrs. 4 cl, 3 lab hrs. Prereq: 101. Safety glasses must be worn in lab. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

### 121 General Chemistry U 5

First course for science majors and engineering students, covering dimensional analysis, atomic structure, the mole, stoichiometry, chemical reactions, electron configuration, periodicity, bonding, and molecular structure.

Su, Au, Wi, Sp Qtrs. 4 cl, 3 lab hrs. Prereq: One unit of high school chem and eligibility to enroll in Math 150. Not open to students with credit for H201 or 204. Safety glasses must be worn in lab. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

### 122 General Chemistry U 5

Continuation of 121 for science majors, covering acids and bases, redox reactions, gases, liquids, solids, solutions, colligative properties, thermochemistry, kinetics, and chemical equilibrium.

Su, Au, Wi, Sp Qtrs. 4 cl, 3 lab hrs. Prereq: 121 or completion of 101 with a grade of A or A- and eligibility to enroll in Math 150. Not open to students with credit for 125 or H202 or 205. Safety glasses must be worn in lab. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

### 123 General Chemistry U 5

Continuation of 122 for science majors, covering solubility and ionic equilibria, qualitative analysis, electrochemistry, descriptive chemistry, coordination compounds, and nuclear chemistry.

Su, Au, Wi, Sp Qtrs. 3 cl, 6 lab hrs. Prereq: 122. Safety glasses must be worn in lab. This course is available for EM credit. GEC phys sci course.

### 125 Chemistry for Engineers U 4

Continuation of 121 for engineering students (other than chemical engineers), covering states of matter, solutions, thermodynamics, kinetics, equilibrium, acids, bases, electrochemistry, and organic chemistry.

Au, Wi, Sp Qtrs. 3 cl, 3 lab hrs. Prereq: 121; prereq or concur: Math 151. Not open to students with credit for 122, 123, or H202. Safety glasses must be worn in lab. This course is available for EM credit.

### H201 General Chemistry U 5

Fundamental chemical principles for selected students.

Au Qtr. 4 cl, 3 lab hrs. Prereq: ACT mathematics score of 30 or above and ACT science reasoning score of 28 or above; prereq or concur: Math 151; or permission of instructor. Safety glasses must be worn in lab. GEC phys sci course. NS Admis Cond course.

### H202 General Chemistry U 5

Continuation of H201; fundamental principles and nonmetal chemistry. Wi Qtr. 4 cl, 3 lab hrs. Prereq: H201. Safety glasses must be worn in lab. GEC course. NS Admis Cond course.

### H203 General Chemistry U 5

Continuation of H202; fundamental principles and chemistry of metals. Sp Qtr. 3 cl, 6 lab hrs. Prereq: H202. Safety glasses must be worn in lab. GEC phys sci course.

### 221 Analytical Chemistry I U 5

Analytical chemistry for chemistry majors; quantitative analysis of the elemental and molecular composition of complex systems.

Su, Au, Wi, Sp Qtrs. 3 cl, 8 lab hrs. H221 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 123 or equiv and eligibility to enroll in Math 151. Safety glasses must be worn in lab. GEC phys sci course.

### 231 Introductory Organic Chemistry U 3

A condensed presentation of organic chemistry organized by functional groups with an emphasis on practical applications.

Sp Qtr. 4 cl. Prereq: 122 or 125. Not open to students with credit for 102 or 251.

### 245 Organic Chemistry Laboratory U 2

Introduction to the laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds.

Su, Au, Wi, Sp Qtrs. 2-3-hr labs. Prereq: 231 or 251. Not open to students with credit for 254. Safety glasses must be worn in lab.

### 246 Organic Chemistry Laboratory U 2

Preparation, isolation, purification, and identification of organic compounds such as are studied in 251 and 252.

Su, Wi, Sp Qtrs. 2-3-hr labs. Prereq: 252, and 245 or 254. Not open to students with credit for 255. Safety glasses must be worn in lab.

### 251 Organic Chemistry U 3

Structure, nomenclature, physical properties, preparation, and reactions of hydrocarbons, alcohols, and ethers.

Au, Wi Qtrs. 4 cl. H251 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 123 or H203.

### 252 Organic Chemistry U 3

Chemistry of carbonyl compounds, acids and their derivatives, and amines and aromatic compounds.

Wi, Sp Qtrs. 4 cl. H252 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 251.

### 253 Organic Chemistry U 3

Selected topics in organic chemistry such as: carbohydrates, amino acids, nucleic acids, spectroscopic methods, polymers, and molecular orbital theory.

Su, Au, Sp Qtrs. 4 cl. H253 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 252.

### 254 Organic Chemistry Laboratory U 3

Introduction to the laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds.

Au, Wi, Sp Qtrs. 1 cl, 2-4-hr labs. H254 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 254: Prereq or concur: 252. Prereq for H254: Prereq or concur: 252, and permission of instructor. Not open to students with credit for 243-244. H254: Wi Qtr only. Safety glasses must be worn in lab.

### 255 Organic Chemistry Laboratory U 3

Continuation of 254.

Au, Wi, Sp Qtrs. 1 cl, 2-4-hr labs. H255 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 255: 252 and 254. Prereq for H255: 252, 254, and permission of instructor. H255: Sp Qtr only. Safety glasses must be worn in lab.

### 294 Group Studies U 3-5

Special studies in chemistry.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

### 520 Physical Chemistry U G 3

The principles of physical chemistry for students in the biological sciences and for BA students majoring in chemistry.

Wi Qtr. 3 cl. Prereq: 211 or 221 or 251, Math 153, and Physics 113 or 133. Not open to students with credit for 531.

### 521 Physical Chemistry U G 3

A continuation of 520.

Sp Qtr. 3 cl. Prereq: 520. Not open to students with credit for 532.



**530 Physical Chemistry U G 3**

Quantum chemistry.

Au Qtr. 3 cl. Prereq: 221 or 251 or equiv; Physics 113 or 133; Math 254; prereq or concur: Math 255; concur 541 recommended for chem majors. Not open to students with credit for 533.

**531 Physical Chemistry U G 3**

Statistical mechanics and thermodynamics.

Wi Qtr. 3 cl. Prereq: 530; concur 542 recommended for chem majors.

**532 Physical Chemistry U G 3**

Thermodynamic equilibrium and chemical kinetics.

Sp Qtr. 3 cl. Prereq: 531.

**541 Physical Chemistry Laboratory U G 3**

Quantitative measurements of chemical phenomena and the application of chemical principles to their interpretation.

Au, Wi, Sp Qtrs. 1 cl, 8 lab hrs. Prereq or concur: 520 or 530. Safety glasses must be worn in lab.

**542 Physical Chemistry Laboratory U G 3**

Continuation of 541.

Au, Wi, Sp Qtrs. 8 lab hrs. Prereq: 541; prereq or concur: 521 or 531. Safety glasses must be worn in lab.

**585 Research Principles in Chemistry U 1-5**

Independent chemical investigation under the direction of a faculty member, culminating in written and oral reports.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 15 cr hrs in chem at the 200 level or above and written permission of instructor under whose direction the student will work. Repeatable to a maximum of 20 cr hrs.

**587 Analytical Chemistry II: Instrumental Analysis U G 3**

Applications of physico-chemical principles to problems of quantitative analysis.

Wi, Sp Qtrs. 3 cl. Prereq or concur: 521 or 532, and 541.

**588 Laboratory Practice in Instrumental Analysis U G 3**

Laboratory applications of physico-chemical principles to instrumental analysis.

Wi, Sp Qtrs. 2 3-hr labs. Prereq or concur: 587 or permission of instructor. Safety glasses must be worn in lab.

**623 Chemical Instrumentation U G 3,5**

Background theory and laboratory applications in the use of electrical and electronic instruments in chemical research.

Su Qtr. 2 cl, 9 or 15 lab hrs. Prereq: 532, prereq or concur Physics 133, and Math 255 or equiv.

**632 Spectroscopic Methods in Organic Chemistry U G 3**

Advanced spectroscopic methods in organic chemistry, including proton and carbon NMR, IR, UV, and mass spectrometry.

Sp Qtr. 3 cl. Prereq: 253 or permission of instructor.

**651 Inorganic Chemistry I U G 3**

Introduction to the principles of inorganic structure and bonding, including molecular symmetry, atomic structure, molecular, and ionic bonding.

Au Qtr. 3 cl. Prereq: 253 or permission of instructor.

**652 Inorganic Chemistry II U G 3**

Chemistry of the transition metals, with emphasis on the stereochemistry, reaction mechanisms, and chemical reactivity of coordination complexes and organometallics.

Wi Qtr. 3 cl. Prereq: 651 or permission of instructor. Not open to students with credit for 751.

**661 Biochemistry**

A survey of biochemistry for the superior advanced undergrad or the beginning grad student who does not necessarily plan to do grad research in biochemistry.

Prereq: 253 and 521 or 532. Not recommended for students with grades of C or below in prereq courses.

**661.01 Biochemistry U G 3**

Au Qtr. 3 cl.

**661.02 Biochemistry U G 3**

Wi Qtr. 3 cl.

**673 Introduction to Quantum Chemistry and Spectroscopy U G 3**

Fundamental quantum chemistry with applications to molecular spectroscopy, suitable for all areas of chemistry.

Su Qtr. 3 cl. Prereq: 532 or equiv; or permission of instructor. Not open to students with credit for 861.

**685 Safety Seminar U G 2**

A survey of safe operational procedures and protocols to be followed in a laboratory environment.

Wi Qtr. 2 cl. This course is graded S/U.

**693 Individual Studies U G 1-15**

A qualified student may conduct a minor investigation in chemistry.

Su, Au, Wi, Sp Qtrs. Conf, library, and lab. Prereq: Satisfactory courses in field of the problem and permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Designed for students to pursue advanced special studies in chemistry.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**701 Seminar in Teaching College Chemistry G 3**

Preparation for teaching lower-division chemistry laboratory and recitation sections.

Su Qtr. 2 2-hr cl. Prereq: Permission of Graduate Advising Committee.

**721 Advanced Analytical Chemistry U G 3**

Chemical and instrumental aspects of modern methods of analysis, emphasizing commonly used contemporary techniques of value to the research chemist.

Au Qtr. 3 cl. Prereq: 587 or equiv or permission of instructor.

**722 Principles of Analytical Processes U G 3**

Speciation and multicomponent equilibria, analog versus digital data acquisition, applications of Fourier transforms, modeling chemical systems.

Wi Qtr. 3 cl. Prereq: 531.

**730 Intermediate Organic Chemistry U G 3**

Intermediate-level course for advanced undergraduates and beginning graduate students in organic reactions and mechanisms.

Au Qtr. 3 cl. Prereq: 253. Recommended for entering grad students in organic chemistry.

**731 Advanced Organic Chemistry I U G 3**

Fundamental aspects of physical organic chemistry.

Au Qtr. 3 cl. Prereq: 253, 521 or 532, or permission of instructor. 730, 731, 832, and 833 comprise the first-year graduate sequence.

**733 Chemistry of Bio-Organic Catalysts and Enzymes U G 3**

Mechanisms of organic catalysts and enzymes; for students majoring in organic chemistry and biochemistry.

Wi Qtr. 3 cl. Prereq: 253 or equiv; also desirable to have undergraduate level physical chemistry and biochemistry.

**750 Fundamental Principles of Inorganic Chemistry U G 3**

Theory and application of modern inorganic chemistry for students who intend to take additional courses in chemistry.

Su Qtr. 3 cl. Prereq: Undergraduate degree in chemistry or permission of instructor.

**751 Transition-Metal Organometallic Chemistry U G 3**

Preparation, structure and bonding, reactivity, and applications to stoichiometric synthesis and catalysis of transition-metal compounds that contain metal-carbon bonds, including metal carbonyls, pi complexes, and metal alkyls.

Au Qtr. 3 cl. Prereq: Permission of instructor or an undergrad degree with a major in chem.

**752 Inorganic Biochemistry U G 3**

Roles of metal ions as biological redox and catalytic cofactors; coordination chemistry; spectroscopy and electrochemistry.

Au Qtr. 3 cl. Prereq: 652 and undergraduate degree with a major in chemistry, or permission of instructor.

**753 Inorganic Cluster Chemistry U G 3**

Bonding, structures, and chemistry of cluster and ring compounds of the transition and main group elements with applications to heterogeneous catalysis and inorganic polymers.

Wi Qtr. 3 cl. Prereq: 652 and undergraduate degree with a major in chemistry, or permission of instructor.

**754 Solid State Inorganic Chemistry U G 3**

Survey of the principles and concepts underlying the synthesis, structure, bonding, reactivity, and properties of solids.

Sp Qtr. 3 cl. Prereq: 532 or equiv or permission of instructor.

**755 Inorganic Chemistry Laboratory U G 3**

Preparation and characterization of inorganic compounds employing a variety of synthetic techniques.

Wi Qtr. 9 lab hrs. Prereq: 531, permission of instructor, or an undergraduate degree with a major in chemistry. Safety glasses must be worn in lab. Not open to students with credit for 655.

**761 Advanced Biochemistry: Proteins U G 3**

An advanced treatment of protein biochemistry.

Au Qtr. 3 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivs. Not open to students with credit for Biochem 705 or 761, or Physchem 705 or 761. Cross-listed in Biochemistry and Medical Biochemistry.

**762 Advanced Biochemistry: Enzymes U G 3**

Advanced treatment of enzymology.

Au Qtr. 2 1.5-hr cl. Prereq: 253, 255, and 521; and Biochem 615; or equivs. Not open to students with credit for Biochem 705 or 762, or MBiochem 705 or 762. Cross-listed in Biochemistry and Medical Biochemistry.

**763 Advanced Biochemistry: Membranes and Bioenergetics U G 2**

An advanced treatment of membranes and bioenergetics.

Wi Qtr. 2 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivs. Not open to students with credit for Biochem 707 or 763, or Physchem 707 or 763. Cross-listed in Biochemistry and Medical Biochemistry.

**765 Advanced Biochemistry: Physical Biochemistry U G 2**

Diffusion, electrophoresis, sedimentation; light and X-ray scattering, X-ray and neutron diffraction, fluorescence, polarimetry, mass spectroscopy, nuclear magnetic resonance.

Wi Qtr. 2 cl. Prereq: 253, 255, 521; and Biochem 615 or equivs. Not open to students with credit for Biochem 765, MBiochem 765 or Physchem 765. Cross-listed in Biochemistry and Medical Biochemistry.

**H783 Honors Research U 3-5**

Independent investigation in chemistry culminating in a thesis and an oral examination.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the chem courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Satisfactory completion of at least 8 cr hrs is required of candidates for an undergrad degree with distinction in chem. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**821 Electroanalytical Chemistry G 3**

Advanced level discussion of electrochemical principles and mass transport processes; discussion of applications to organic and inorganic systems.

Wi Qtr. 3 cl. Prereq: 532 or permission of instructor.

**822 Principles and Practice of Separation Processes G 3**

Principles and applications of equilibrium and kinetic separation processes such as precipitation, solvent extraction, ion exchange, liquid-liquid chromatography, gas-liquid chromatography, and zone refining.

Au Qtr. 3 cl. Prereq: 821 or permission of instructor.

**823 Analytical Spectroscopy G 3**

Advanced course in the principles of measurement of the interaction of electromagnetic radiation with matter.

Sp Qtr. 3 cl. Prereq: 821 or permission of instructor.

**831 Physical Organic Chemistry G 3**

Thermodynamics, kinetics, and mechanisms of organic reactions with a particular focus on organic reactive intermediates.

Wi Qtr. 2 1.5-hr cl. Prereq: 731.

**832 Advanced Organic Chemistry II G 3**

An advanced course in the fundamental principles of chemistry covering alicyclic, hydroaromatic, and aromatic compounds.

Wi Qtr. 3 cl. Prereq: 731.

**833 Advanced Organic Chemistry III G 3**

An advanced course in the fundamental principles of chemistry covering a survey of heterocyclic compounds, carbohydrates, proteins, and enzymes.

Sp Qtr. 3 cl. Prereq: 832.

**835 Advanced Organic Chemistry Laboratory G 3,5**

An advanced course in fundamental reactions and procedures with emphasis on recent advances in technique.

Su Qtr. 9 lab hrs. Prereq: Permission of student's grad adviser. Safety glasses must be worn in lab.

**836 Advanced Organic Chemistry Laboratory G 3,5**

Continuation of 835.

Su Qtr. 9 lab hrs. Prereq: Permission of student's grad adviser. Safety glasses must be worn in lab.

**851 Advanced Inorganic Chemistry G 3**

A survey of modern theories of valence and their application to the problems of structural inorganic chemistry.

Sp Qtr. 3 cl. Prereq: 532 and 652 or 752 or permission of instructor.

**861 Quantum Chemistry I G 3**

Basic quantum mechanics as a foundation for quantum chemistry; postulates, operators, eigenfunctions, eigenvalues, and Schroedinger wave equations; one-dimensional problems including the harmonic oscillator.

Au Qtr. 3 cl. Prereq: 532, Math 255 or 415 or equiv, and Physics 133.

**862 Quantum Chemistry II G 3**

Angular momentum; matrix elements and representations; the hydrogenic atom; perturbation and variation methods, electron spin, and the helium atom; atomic structure and multiplet theory.

Wi Qtr. 3 cl. Prereq: 861 or equiv.

**863 Quantum Chemistry III G 3**

Electronic structure of molecules; hydrogen molecule and ion, methane, ethylene, benzene, etc.; molecular orbital, valence bond, and self-consistent field methods.

Sp Qtr. 3 cl. Prereq: 862.

**866 Electronic Spectra and Structure of Molecules G 3**

Application of quantum mechanics to the description and interpretation of molecular spectroscopic data with an emphasis on electronic transitions of polyatomic molecules.

Sp Qtr. 3 cl. Prereq: 863 or equiv or permission of instructor.

**875 Chemical Kinetics I G 3**

Fundamentals of chemical kinetics in homogeneous liquid and gaseous systems.

Au Qtr. 3 cl. Prereq: 532.

**876^ Chemical Kinetics II G 3**

Continuation of 875; elementary reactions; chain reactions; fast reaction methods; reaction rates in heterogeneous systems.

Wi Qtr. 3 cl. Prereq: 875.

**881 Thermodynamics I G 3**

Introduction to thermodynamics; emphasis on training in the use of thermodynamics as a tool for solving chemical problems.

Wi Qtr. 3 cl. Prereq: 875 or equiv.

**882 Statistical Thermodynamics G 3**

An introduction to statistical thermodynamics, including quantum statistics, entropy and the third law, statistical-spectroscopic calculation of thermodynamic functions of gases, chemical equilibria, and vapor pressure.

Sp Qtr. 3 cl. Prereq: 881.

**885 Colloquium in Chemistry G 1**

A discussion of current research in chemistry; all divisions.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in chem. Required every qtr of all registered grad students in chem. Repeatable. This course is graded S/U.

**941 Theoretical Organic Chemistry G 3**

An advanced course in a special topic in organic chemistry; topic to be announced.

Au Qtr. 3 cl. Prereq: 832 and 2nd yr grad standing, or permission of instructor.

**942 Theoretical Organic Chemistry G 3**

An advanced course in a special topic in organic chemistry; topic to be announced.

Wi Qtr. 3 cl. Prereq: 832 and 2nd yr grad standing, or permission of instructor.

**944 Computational Chemistry G 3**

A practical and theoretical introduction to computational chemistry.

Su Qtr. 3 cl. Prereq: Permission of instructor.

**990 Seminar on Topics in Biochemistry G 3**

Advanced topics in the biological aspects of chemistry.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**991 Seminar in Analytical Chemistry G 3**

Topic to be announced.

Au Qtr. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**992 Seminar in Organic Chemistry G 3**

Topic to be announced.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 832 and chem 2nd yr grad standing; or equivs and permission of instructor. Repeatable to a maximum of 12 cr hrs.

**995 Seminar in Inorganic Chemistry G 3**

Topic to be announced.

Wi Qtr. 3 cl. Prereq: 752 or equiv and permission of instructor. Repeatable to a maximum of 6 cr hrs.

**996 Seminar in Theoretical Chemistry G 3**

Advanced topics in theoretical chemistry including quantum mechanics of molecular wave functions, energies, rate processes, and quantum and statistical mechanics of condensed phases.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 863 or equiv. Repeatable to a maximum of 9 cr hrs.

**999 Research in Chemistry G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Chinese

204 Cunz Hall, 1841 Millikin Road, 292-5816

**101 Level One Chinese I**

Mandarin Chinese spoken communication and writing system.

Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Au Qtr. 5 cl. Students register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement.

**102 Level One Chinese II**

Continuation of 101.

Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Wi Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement.

**103 Level One Chinese III**

Continuation of 102.

Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Not open to students with credit for 103; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

**103.01 Classroom Track U 5**

Sp Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**103.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 104.01 or 104.51. Progress is sequential from one cr hr to the next with a demonstrated proficiency of 80% required for advancement to next level.

**104 Level Two Chinese I**

Mandarin Chinese intermediate level spoken communication, development of reading skills, and written composition.

Prereq: 103 or 103.01 or 5 cr hrs of 103.51. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

**104.01 Classroom Track U 5**

Au Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**104.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: 103 or 103.01 or 5 cr hrs of 103.51. Students register for and complete 1 to 5 cr hrs during the qtr. Repeatable to a maximum of 5 cr hrs. Students who complete 5 cr hrs before the end of the qtr may proceed to 205. Progress is sequential from one cr hr to the next with a demonstrated proficiency of 80% required for advancement to the next level.

**205 Level Two Chinese II U 5**

Continuation of 104.

Wi Qtr. 5 cl. Prereq: 104 or written permission of instructor. This course is available for EM credit.

**206 Level Two Chinese III U 5**

Continuation of 205.

Sp Qtr. 5 cl. Prereq: 205 or written permission of instructor. This course is available for EM credit.

**210 Intensive Second Year Chinese I U 5**

First course in the sequence of intensive intermediate Chinese courses; attention to the four language skills: listening, speaking, reading, and writing. Au Qtr. 5 cl. Prereq: 103 or equiv, or permission of instructor; concur: 211. Not open to students with credit for 104, 111, or 205. Students must register for 210 and 211 concurrently.

**211 Intensive Second Year Chinese II U 5**

Second course in the sequence of intensive intermediate Chinese courses; attention to the four language skills: listening, speaking, reading, and writing. Au Qtr. 5 cl. Prereq: 103 or equiv, or permission of instructor; concur: 210. Not open to students with credit for 104 or 205. Students must register for 210 and 211 concurrently.

**231 Traditional Chinese Culture U 5**

Chinese institutions, philosophical trends, religion, art, and literature prior to the 20th century.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums cultures and ideas course.

**232 Modern Chinese Culture U 5**

Modern Chinese culture as reflected in family life, language, literature, art, etc.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums cultures and ideas course.

**251 Chinese Literature in Translation U 5**

Representative masterpieces from 3,000 years of Chinese literature, fiction, drama, prose, and poetry in English translation.

Au, Wi, Sp Qtrs. 5 cl. GEC arts and hums lit course.

**283 Chinese Calligraphy U 3**

Techniques of writing Chinese characters with a brush; practice in different styles from oracle bone to grass.

Wi Qtr. 3 cl. Knowledge of Chinese not required. VPA Admis Cond course.

**293 Individual Studies U 1-5**

Individual investigation of problems in Chinese culture, language, and literature.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**310 Intensive Second-Third Year Chinese I U 5**

Fourth course in the sequence of intensive intermediate Chinese courses; use of authentic materials (selections from newspapers, radio broadcasts, television programs, etc.).

Wi Qtr. 5 cl. Prereq: 210 and 211 or equiv, or permission of instructor; concur: 311. Students must register for 310 and 311 concurrently.

**311 Intensive Second-Third Year Chinese II U 5**

Fifth course in the sequence of intensive intermediate Chinese courses; use of authentic materials (selections from newspapers, radio broadcasts, television programs, etc.).

Wi Qtr. 5 cl. Prereq: 210 and 211 or equiv, or permission of instructor; concur: 310. Students must register for 310 and 311 concurrently.

**501 Chinese Poetry in Translation U G 5**

Major genres of Chinese poetry from 600 B.C. to the 13th century A.D.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums lit course.

**502 Chinese Fiction in Translation U G 5**

Novels and short stories from the Ming and Qing dynasties.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums lit course.

**503 Modern Chinese Literature in Translation U G 5**

Chinese literature from the teens and twenties to the present day.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums lit course.

**504 Chinese Drama in Translation U G 5**

The development of Chinese drama from the Yuan dynasty to modern times.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums and lit course.

**507 Level Three Chinese I U 5**

Continued study of spoken communication, including broadcast media, reading Chinese publications, and development of written composition.

Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.

**508 Level Three Chinese II U G 5**

Continuation of 507.

Wi Qtr. 5 cl. Prereq: 507 or permission of instructor.

**509 Level Three Chinese III U G 5**

Continuation of 508.

Sp Qtr. 5 cl. Prereq: 508 or permission of instructor.

**510 Intensive Third Year Chinese I U G 5**

Sixth course in the sequence of intensive intermediate Chinese courses; organized around a set of videotaped lessons (television news, commercials, movies) and a series of genre-specific samples of Chinese.  
Sp Qtr. 5 cl. Prereq: 310 and 311 or equivs, or permission of instructor; concur: 511.

**511 Intensive Third Year Chinese II U G 5**

Seventh course in the sequence of intensive intermediate Chinese courses; organized around a set of videotaped lessons (television news, commercials, movies) and a series of genre-specific samples of Chinese.  
Sp Qtr. 5 cl. Prereq: 310 and 311 or equivs, or permission of instructor; concur: 510.

**580 The Chinese Language: Description and Analysis U G 5**

Important elements of the Chinese language, its structure, dialects, writing system, as well as language use and planning; taught in English.  
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 103 or equiv or permission of instructor. GEC third writing course.

**600 Performance Traditions of China U G 5**

Introduction to the panorama of oral and orally-related performance traditions of China; explores local traditions of professional storytelling, epic singing, folk songs, and local drama.  
Wi Qtr. 2 2-hr cl. Prereq: 231 or 251 or 252, or EALL 131, or Japanese 231 or 251 or 252, or Korean 231 or 251; or permission of instructor.

**601 Classical Chinese I U G 5**

Selected readings from representative authors of classical times.  
Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.

**602 Classical Chinese II U G 5**

Continuation of 601.  
Wi Qtr. 5 cl. Prereq: 601 or equiv with written permission of instructor.

**603 Classical Chinese III U G 5**

Continuation of 602.  
Sp Qtr. 5 cl. Prereq: 602 or equiv with written permission of instructor.

**610 Level Four Chinese I U G 5**

Integrated-skill course focusing on reading and composition which requires participation in speaking and lecture comprehension.  
Au Qtr. 3 1.5-hr cl. Prereq: 509, or 510 and 511, or written permission of instructor.

**611 Level Four Chinese II U G 5**

Multi-media based study of authentic Chinese texts which trains students to speak, listen, read, and write about how language is used and when it is culturally appropriate.  
Wi Qtr. 5 cl. Prereq: 610 or written permission of instructor.

**612 Level Four Chinese III U G 5**

Multi-media based study of authentic Chinese literary texts which trains students to speak, listen, read, and write in the discourses of Chinese culture and cultural studies.  
Wi Qtr. 5 cl. Prereq: 611 or written permission of instructor.

**651 History of Chinese Literature I U G 5**

Chinese literature from antiquity to the end of Six Dynasties; various aspects of the classical tradition and new developments in the Age of Disunity.  
Wi Qtr. 2 2-hr cl. Prereq: Written permission of instructor. Taught in English. Partial texts in Chinese optional. Open to nonmajors.

**652 History of Chinese Literature II U G 5**

Chinese literature from Sui to the present; literary trends and achievements of the Sui-T'ang period; rise of vernacular writings; modern literature under western impact.  
Sp Qtr. 2 2-hr cl. Prereq: Written permission of instructor. Taught in English. Partial texts in Chinese optional. Open to nonmajors.

**674 Chinese Opera U G 5**

An introduction to Chinese (Peking) opera as dramatic literature and performing art; study of selected plays and illustrated discussions of various aspects of the theatre.  
Sp Qtr. 5 cl.

**678 Studies in Chinese-American Literature U G 5**

Critical study of modern Chinese-American literature in historical and cultural context; topics vary: gender issues, genre studies, women's writing.  
Au Qtr. 2 2-hr cl. Prereq: 10 or hrs in any literature or grad standing or permission of instructor. Repeatable to a maximum of 10 or hrs. Including or hrs earned in Comp Std 678. Cross-listed in Comparative Studies in the Humanities.

**680 Introduction to Chinese Linguistics U G 5**

Investigation of the phonology, morphology, syntax, lexicon, and writing system of the Chinese language.  
Wi Qtr. 2 2-hr cl. Prereq: 103 and Linguist 601, or permission of instructor.

**681 History of the Chinese Language U G 5**

An investigation of the relations between modern Chinese and its earlier stages, ancient and archaic Chinese.  
Sp Qtr. 2 2-hr cl. Prereq: 680 or permission of instructor.

**683 Study of the Chinese Writing System U G 5**

A critical study of the origin, classification, composition, and development of the Chinese writing system, including problems in simplification and alphabetization.  
Wi Qtr. 3 cl. Prereq: 103 or permission of instructor.

**690 Chinese Translation Workshop U G 3**

Investigations of problems and techniques of translating Chinese into English and English into Chinese; practice of translation of selected passages; individual assignments and group discussion.  
Sp Qtr. 2 cl. Prereq: 509 and 603, or equivs with written permission of instructor.

**693 Individual Studies U G 1-5**

Directed study to meet individual research needs of students in area studies and East Asian programs.

Su, Au, Wi, Sp Qtrs. Prereq: 509 or 603, and written permission of instructor. Repeatable to a maximum of 15 or hrs. Not a substitute for regular language courses. This course is graded S/U.

**694 Group Studies U G 1-5**

Investigation of minor problems in Chinese language and literature.  
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. Not a substitute for regular language courses.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.  
Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**751 Selected Readings in Scholarly Chinese Texts I U G 3**

Academic writings in the humanities and social sciences by modern Chinese scholars in both the wen-yen and pai-hua styles.  
Au Qtr. 3 cl. Prereq: 509 or permission of instructor.

**752 Selected Readings in Scholarly Chinese Texts II U G 3**

Continuation of 751.  
Wi Qtr. 3 cl. Prereq: 751 or permission of instructor.

**753 Selected Readings in Scholarly Chinese Texts III U G 3**

Continuation of 752.  
Sp Qtr. 3 cl. Prereq: 752 or permission of instructor.

**761\* Modern Chinese Poetry U G 3**

Lectures and readings covering major poets since 1919.  
Au Qtr. 3 cl. Prereq: 652 or permission of instructor.

**762\* Modern Chinese Prose U G 3**

Studies of various types of prose literature of the May Fourth Movement and the Communist period.  
Sp Qtr. 3 cl. Prereq: 652 or permission of instructor.

**763\* Modern Chinese Fiction U G 5**

Readings in twentieth-century Chinese fiction.  
Au Qtr. 2 2-hr cl. Prereq: 651 or 652 or permission of instructor.

**764\* Modern Chinese Drama U G 3**

Lectures on and readings in works by major 20th-century playwrights including Hung Shen and Ts'ao Yu.  
Wi Qtr. 3 cl. Prereq: 652 or permission of instructor.

**782\* Chinese Phonology U G 3**

Mandarin phonology and Chinese dialectology.  
Sp Qtr. 3 cl. Prereq: 681 or permission of instructor.

**H783 Honors Research U 3-5**

A program of reading arranged for each student, with individual conferences, reports, and honors thesis.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of Chinese courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Open only to Chinese majors. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**784\* Chinese Syntax U G 3**

An investigation of the syntactic structure of Mandarin Chinese.  
Sp Qtr. 3 cl. Prereq: 680 or 681 or permission of instructor.

**785 Modern Chinese Dialects U G 3**

Investigation of the phonology, morphology, lexicon, and syntax of the major modern Chinese dialects from a cross-dialectal, comparative approach.  
Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 680 or permission of instructor.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.  
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs. With permission of dept.

**800 Chinese Bibliography and Research Methods G 3**

An introduction to bibliographies and reference works in the Chinese humanities; general and specific problems for research.  
Wi Qtr. 3 cl. Prereq: 509 and 603, or equivs with written permission of instructor.

**804 Advanced Classical Chinese I G 3**

Designed for further study of the syntax and vocabulary of classical Chinese; texts are selected from literature, history, and philosophy.  
Au Qtr. 3 cl. Prereq: 603 or equiv with written permission of instructor.

**805 Advanced Classical Chinese II G 3**

Continuation of 804.  
Wi Qtr. 3 cl. Prereq: 804.

**806 Advanced Classical Chinese III G 3**

Continuation of 805.  
Sp Qtr. 3 cl. Prereq: 805.

**871\* Traditional Chinese Poetry G 5**

Lectures and readings from ancient odes and songs and the later shih and tz'u poetry.  
Au Qtr. 2 2-hr cl. Prereq: 651 and 652, or permission of instructor.

**872\* Traditional Chinese Prose G 5**

Lectures on and readings in various types of non-fiction prose in ku-wen and yu-lu-t'i styles of early times.  
Sp Qtr. 2 2-hr cl. Prereq: 651 and 652, or written permission of instructor.

**873\* Traditional Chinese Fiction G 5**

Lectures and readings in classical and vernacular fiction.  
Au Qtr. 2 2-hr cl. Prereq: 651 and 652, or permission of instructor.

**874\* Traditional Chinese Drama G 5**

A lecture and reading course in Yuan, Ming, and Ch'ing drama.  
Sp Qtr. 2 2-hr cl. Prereq: 651 and 652, or permission of instructor.

**875\* Chinese Literary Criticism G 5**

The historical development of critical theories, with concentration on major critics.  
Sp Qtr. 2 2-hr cl. Prereq: 3 Chinese literature courses at the 700 level or above, or equiv with written permission of instructor.

**879 Seminar in Chinese Literature G 3-5**

An intensive reading course in Chinese literature with a selected topic for each offering and research projects for individual students; topic to be announced.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**882\* Studies in Chinese Historical Phonology G 5**

Critical study of the rhyming dictionaries, the reconstruction of the phonology of old Chinese and its relations to modern Chinese dialects.  
Sp Qtr. 2 2-hr cl. Prereq: 782 or permission of instructor.

**884\* Studies in Chinese Historical Syntax G 3**

Problems of Chinese historical syntax; grammatical structures of classical Chinese; syntactic rules found in selected texts from various ancient writings.  
Sp Qtr. 3 cl. Prereq: 784 or permission of instructor.

**889 Seminar in Chinese Linguistics G 3-5**

Topics include the history of Chinese linguistics and related areas, specific studies in Chinese dialects, etc.  
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs. With permission of dept.

**998 Research in Chinese: Thesis G 1-18**

Research for thesis purposes only.  
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research in Chinese: Dissertation G 1-18**

Research for dissertation purposes only.  
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Circulation Technology

School of Allied Medical Professions  
152 Atwell Hall, 1583 Perry Street, 292-7261

**210 Information Technology in Medicine U 5**

An overview of computer-assisted technology in medicine in the areas of teleradiology, telemedicine, remote diagnosis and automated pharmaceutical dispensing.  
Au, Sp Qtrs. 2 2-hr cl, 1 3-hr lab. Prereq: Math 148 or equiv.

**400 The Practice of Circulation Technology U 5**

An introduction to the practice of Circulation Technology with an emphasis on the student's function within the medical-surgical team.  
Au Qtr. 2 cl, 2 3-hr labs. Prereq: Enrollment in Circulation Technology or permission of instructor.

**415 Applied Circulation Technology-Physiological Principles U 5**

The presentation of cardiac, respiratory, and renal physiology and their relationship to extracorporeal devices and technology.  
Wi Qtr. 5 cl. Prereq: 400 or permission of instructor.

**420 Circulation Technology Instrumentation U 5**

The application of mechanical and electronic principles to the instrumentation unique to circulation technology with emphasis on design and selection of equipment.  
Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 400 or permission of instructor.

**430 Clinical Management of the Cardiac Patient U 5**

The presentation of cardiac anatomy, pathophysiology, and diagnosis and treatment of cardiac disease including the use of extracorporeal devices.  
Sp Qtr. 2 2-hr cl, 1 1-hr cl. Prereq: 400 or permission of instructor.

**450 Cardiopulmonary Monitoring and Assessment U 5**

Lectures and laboratories involving invasive and non-invasive techniques of cardiopulmonary assessment and data interpretation.  
Sp Qtr. 2 2-hr cl, 1 3-hr lab. Prereq: 420 or permission of instructor.

**460 Applied Circulation Technology-Phase I U 5**

An introduction to cardiopulmonary bypass circuits, components, and ancillary devices associated with the practice of extracorporeal technology.  
Wi Qtr. 2 2-hr cl, 2 1.5-hr labs. Prereq: 400 or permission of instructor.

**470 Applied Circulation Technology-Phase II U 6**

Principles and practices of cardiopulmonary bypass; focus on physiological aspects of perfusion; laboratory simulation of cardiopulmonary bypass.  
Sp Qtr. 3 2-hr cl. Prereq: 460 or permission of instructor.

**500 Circulation Technology Clinical Preparation U 5**

Principles and practices of perfusion; focus on special procedures and adjunctive techniques.  
Su Qtr. 5 8-hr cl for 2 weeks. Prereq: 470 or written permission of instructor.

**505 Circulation Technology Pre CPBP Clinical Rotation U 3**

Concurrent clinical experiences augmenting principles and practices of perfusion; focus on special procedures and adjunctive techniques.  
Su Qtr. 5 8-hr cl, 2 2-week rotations. Prereq: 470 or written permission of instructor. This course is graded S/U.

**510 Applied Circulation Technology-Cardiovascular U 8**

The presentation of cardiovascular physiology, pathology, and treatment of cardiovascular disease by the use of extracorporeal devices.  
Au Qtr. 2 3-hr cl, 1 2-hr cl. Prereq: 460 or permission of instructor.

**512 Applied Circulation Technology-In Vitro Lab U 4**

The study of various extracorporeal devices and techniques in a controlled in vitro laboratory environment.  
Au Qtr. 1 6-hr lab, 1 2-hr conf. Prereq: 460 or permission of instructor.

**513 Applied Circulation Technology-In Vivo Lab U 5**

The study of various extracorporeal devices and techniques in a controlled in vivo laboratory environment.  
Au Qtr. 1 9.5-hr lab, 1 1-hr conf. Prereq: 460 or permission of instructor.

**560 Surgical Support Systems: Phase I U 5**

Case studies relating circulation technology to the clinical use of extracorporeal circulation devices and monitoring instrumentation in surgery.  
Wi Qtr. Arr. Prereq: 510 or permission of instructor.

**561 Surgical Support Systems-Clinical Experience: Phase I U 10**

Clinical experience in the preparation and operation of extracorporeal circulation devices and monitoring instrumentation in support of surgery.  
Wi Qtr. Arr. Min: 40 hrs/wk. Prereq: 510 or permission of instructor.

**570 Surgical Support Systems: Phase II U 5**

Case studies relating circulation technology to the clinical use of extracorporeal circulation devices and monitoring instrumentation in surgery.  
Sp Qtr. 5 cl. Prereq: 560 and 561; or permission of instructor; concur: 571.

**571 Surgical Support Systems-Clinical Experience: Phase II U 10**

Clinical experience in the preparation and operation of extracorporeal circulation devices and monitoring instrumentation in support of surgery.  
Sp Qtr. Arr. Min: 40 hrs/wk. Prereq: 560 and 561, or permission of instructor.

**593 Individual Studies in Circulation Technology U 1-5**

Clinical, laboratory, or research experiences by individual arrangement for qualified students.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**595 Seminar in Circulation Technology U 1-5**

Conferences, group discussions, and presentations of selected topics.  
Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

## City and Regional Planning

109 Brown Hall, 190 West 17th Avenue, 292-1012

**310 Introduction to City and Regional Planning U 4**

Introduction to fundamental concepts, including physical planning, transportation, housing, land use, urban development, and preservation.  
Au, Wi, Sp Qtrs. 4 cl.

**320 Planning for Housing U 4**

An introduction to the American housing system, evolution of housing programs, and selected topics in planning for housing in urban and regional contexts.  
4 cl.

**330 Planning and Urban Design U 4**

Introduction to the use of concepts related to urban design and to the planning process.  
4 cl.

**597 City Planning in the Contemporary World U 5**

Urban shelter and service delivery in developed/developing and capitalist/socialist regions of the world; role of income, jobs, and planning in housing.  
Sp Qtr. 2 2-hr cl. Prereq: Sr standing. Not open to students with credit for 425. GEC/LAR course.

**607 Fundamentals of Geographic Information Systems U G 4**

Basic principles of geographic and land information systems and their use in spatial analysis and information management.  
Wi Qtr. 3 cl, 1 3-hr lab. Prereq: Sr standing. Not open to students with credit for Geog 685; or 607 in Civil En, Geod Sci, Geog, Geol Sci, or Nat Res. Cross-listed in Civil Engineering, Geodetic Science, Geography, Geological Sciences, and Natural Resources.

**643 American City Planning since 1900 A.D. U G 4**

Introduction to current American city planning processes and urban form through historic evolution of urban problems and related urban planning systems since 1900.  
Sp Qtr. 2cl, 1 lab hr. Not open to students with credit for 300 or 743 or 811.

**694 Group Studies U G 1-5**

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U 1-15**

An opportunity for Ohio State students to study at a foreign institution and receive Ohio State credit for that work.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**702\* Urban Planning Graphics U G 2**

Rudiments of graphic techniques employed most frequently in practice; basic drafting, printing processes, report preparation, and related subjects.  
Wi Qtr. 1 cl, 2 lab hrs. Prereq: Grad standing in C&R Plan or permission of instructor.

**710\* Introduction to Urban and Regional Planning for Open Space, Recreation, and Conservation U G 3**

Review of leisure and recreational activities with associated design criteria, definition of the need for open space, and exploration of workable programs for its preservation and development.  
Sp Qtr. 2 cl.

**712 Theory of City and Regional Planning U G 4**

Planning processes; the general plan; formulating goals; land development policies and decisions; alternative urban and regional forms; role and scope of planning.

Au Qtr. 4 cl. Not open to students with credit for 812.

**720 Introduction to Analysis of Energy Factors in City and Regional Planning U G 3**

Covers the resource, technological, environmental, economic, and institutional dimensions related to coal, natural gas, electricity, solar, geothermics, environmental impacts, and energy conservation in cities.  
Wi Qtr. 2 cl.

**721 Seminar on Mathematical Models of Energy Management and Planning U G 3**

Mathematical models in coal, electricity, energy storage and curtailment, solar energy, energy/environment interactions, and comprehensive urban and regional energy planning.

Au Qtr. 2 cl. Prereq: 770.

**722 Introduction to Analysis and Use of Environmental Factors in City and Regional Planning U G 3**

Introduction to application and utilization of environmental considerations in the formulation of land use policy and development plans.  
Au Qtr. 2 cl. Prereq: 745 or permission of instructor.

**724 Introduction to Planning for Sustainable Development U G 4**

Introduction to sustainable development and planning focuses on the relationship between land use and sustainability.  
Wi Qtr.

**731 Outlines of Urban Design U G 3**

Urban design as an area of specialization in urban planning; theories and processes in urban design; evaluation of criteria.  
Sp Qtr. 3 cl.

**732 Urban Planning and Urban Form: Psychological Functions U G 3**

Urban planning for the organization and character of the physical environment as significant variables in psychological processes basic to effective individual functioning; emphasis on implications for urban design.  
Wi Qtr. 3 cl.

**733 Urban Planning and Urban Form: Social Functions U G 4**

Urban planning for the organization and character of the physical environment as significant variables in social processes basic to effective individual functioning; emphasis on implications for urban design.  
Wi Qtr. 2 2-hr cl.

**734 Research and Analytic Methods for Urban Designers U G 3**

Use of research and analytic methods in assisting the urban designer in problem formulation, search, prediction, evaluation, and choice.  
Sp Qtr. 2 cl.

**735\* Programming Environments for Human Use U G 3**

Introduction to user oriented environment programming for planners and designers; application of several methods for specifying the characteristics required of an environmental setting to support user behavior.  
Sp Qtr.

**740\*\* Introduction to Planning in Developing Countries G 5**

Survey of development issues and their planning response related to population growth and distribution, income and poverty, urbanization and migration, and housing and infrastructure.  
Au Qtr. 2 2-hr cl.

**741 Urban Sector and Project Planning in Developing Countries G 5**

Issues in urban sector planning with a focus on housing and service delivery, including financial intermediation, municipal finance and cost recovery, local administration, and urban land.  
Wi Qtr. 2 2-hr cl. Prereq: 740 or equiv.

**745 Physical Element of Urban Development U G 5**

Physical components of urban areas; residential, commercial, industrial, pedestrian, and vehicular circulation; other community facilities; analysis of design criteria and standards.

Au Qtr. 3 cl, 3 lab hrs. Not open to students with credit for 845.

**746\* Managing the Urban Spatial Environment: Regulatory Techniques U G 3**

Physical planning, environmental and urban design policy design and implementation in central city and suburban settings; emphasis on innovative regulatory approaches.

Wi Qtr. 2 cl.

**749 Studio in Planning for Developing Countries G 5**

A studio with group projects on planning issues in developing countries.

Sp Qtr. 4 cl. Prereq: 741.

**750 Resolving Social Conflict G 4**

A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflicts.

Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in Business Administration: Interdisciplinary and Natural Resources.

**752 Urban Planning for Housing U G 3**

Introduction to urban planning issues related to housing with regard to urban structure, markets, reform, suburbanization, new towns, urban renewal, and rehabilitation.

Au Qtr. 3 cl.

**753 Outlines of Regional Planning U G 3**

State, national, and regional planning; components of regional development; regional analysis and design.

Au Qtr. 3 cl. Not open to students with credit for 813.

**755 State Planning of Regional Growth and Development U G 3**

Rationale for state intervention in regional economics, growth centers and neoclassical models, development planning in foreign countries; comparison and evaluation of models and evidence.

Wi Qtr. 3 cl. Prereq: 753 or equiv with written permission of instructor. Not open to students with credit for 820.

**761 Land-Use Controls U G 4**

Legal basis of land-use controls in the United States, provisions, procedures and issues in zoning, subdivision regulation, urban renewal, building and housing codes, and acquisition of real property for public use.

Wi Qtr. 3 cl. Not open to students with credit for 861.

**762 Urban Planning Data and Forecasting U G 5**

Sources of information, data handling, forecasting, and basic studies in urban planning.

Sp Qtr. 3 cl, 6 lab hrs. Prereq: 770 or permission of instructor. Not open to students with credit for 832.

**763 Consequence Analysis in Urban Planning U G 4**

Urban planning studies using cost-benefit, cost-effectiveness, systems analysis, and PPBS approaches.

Au Qtr. 2 cl, 2 lab hrs. Prereq: 770 or permission of instructor.

**764 City Planning Administration U G 4**

Administration of official urban planning agencies; zoning administration; subdivision review practices; capital improvement programming; budget and work program preparation.

Au Qtr. 4 cl. Not open to students with credit for 862.

**765\* Social Policy Law U G 4**

Studies of law and social policy; topics vary.

Sp Qtr. 4 cl. Not open to students with credit for 865.

**766 Environmental Planning Law U G 4**

The interaction between law and environmental planning and protection.

Au Qtr. 4 cl. Prereq: 761 or equiv with written permission of instructor. Not open to students with credit for 866.

**770 Introduction to Quantitative Methods in Urban Planning U G 4**

Introduction of mathematical models in urban planning; descriptive statistics, probability, decision theory, and use of digital computer.

Au Qtr. 4 cl. Prereq: Permission of instructor.

**771 Applications of Quantitative Methods in Urban Planning U G 4**

Applications of statistical analysis in urban planning; hypothesis testing and parameter examination methods; computer analysis of urban planning data.

Wi Qtr. 4 cl. Prereq: 770.

**775 Urban Transportation Planning U G 4**

Discussion and examples of urban transportation planning processes, emphasizing quick-response models of locational and travel behavior, development and evaluation of alternatives, policies, and citizen reaction and participation.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Civil En 670 or equiv with written permission of instructor or grad standing in C&R Plan. Not open to students with credit for Civil En 775. Cross-listed in Civil Engineering.

**776 Topics in Urban Transportation and Planning U G 3**

Survey of major topics in urban transportation planning, emphasizing policy concerns and analytical tools necessary to address these concerns.

Wi Qtr. 1 2-hr cl. Prereq: 770 or equiv; 781 or equiv; or permission of instructor.

**777\* Transportation Regulation U G 3**

Current U.S. transport regulation and tools needed to evaluate its desirability.

Sp Qtr. 1 2-hr cl. Prereq: 770 or equiv; 781 or equiv; or permission of instructor.

**780 Workshop in Urban and Regional Planning Techniques U G 3-5**

Techniques in the urban and regional planning process: spatial distribution and management of population and economic growth in the city and the region, stressing the applied aspects of the techniques as used in the profession.

Sp Qtr. Prereq: 770 or permission of instructor.

**781 Spatial Models in Urban Planning U G 4**

Urban planning applications of theories of spatial equilibrium and rent theory; impacts on spatial distribution of zoning, property taxation, and infrastructural investment.

Sp Qtr. 4 cl. Not open to students with credit for 880.

**793 Individual Studies in Urban Planning U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**794 Group Studies in Urban Planning U G 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs.

**815 Case Studies in Urban Planning for Housing G 4**

Review of empirical studies in urban planning for housing including aspects of density, spatial production, housing services, and price formation.

Wi Qtr. 2 cl, 2 lab hrs. Prereq: 752 or permission of instructor.

**816 Seminar in Urban Planning for Housing G 3**

Presentation and discussion of research related to urban planning for housing, including theoretical studies, modeling, simulation, and statistical testing.

Sp Qtr. 3 cl. Prereq: 752 or permission of instructor.

**821 Regional Planning Studio G 5**

Application of economic and environmental analysis to regional development projects.

Sp Qtr. 2 cl, 3 lab hrs. Prereq: 723. Repeatable to a maximum of 10 cr hrs.

**834 Decision Analysis in Urban Planning G 3**

Application of decision theory and analysis to case studies in urban planning.

Sp Qtr. 3 cl. Prereq: 770.

**835\* Land Use, Environmental Quality, and Regional Analysis G 4**

Introduction of land use and environmental models as tools in the planning process and as techniques for improving the quality of physical development plans.

Sp Qtr. Prereq: 770 or equiv or permission of instructor.

**851 Urban Precinct Planning G 5**

Preparation of detailed physical development plans for a small section of a city.

Au Qtr. 3 cl, 6 lab hrs. Prereq: 745 or 762 or permission of instructor.

**852 Urban Project and Policy Planning G 5**

Identification of options among planning policies and projects; development of analyses to aid in making choices between options in urban development.

Wi, Sp Qtrs. 2 cl, 9 lab hrs. Prereq: 745 or 762.

**853 The Urban General Plan G 5**

Current practice in preparation of the urban general plan; laboratory exercise in the preparation of a general plan for an urban community.

Wi Qtr. 3 cl, 6 lab hrs. Prereq: 745, 762, and 781; or permission of instructor.

**864 Urban Planning Theory Seminar**

Review of contemporary urban planning programs; analyses of objectives and strategies.



**854.01 History of Planning Thought G 5**

Examination of how planning thought evolved in relation to different stages of our civilization.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**867\*\* Land Use Policy G 4**

Law and administration in land use planning programs.

Sp Qtr. Prereq: 761 or permission of instructor.

**870 Research on Quantitative Methods in Urban Planning**

Workshop application of quantitative planning methods to an urban or regional planning problem.

Au, Wi, Sp Qtrs. 1 cl, 3 lab hrs. Prereq: 770 or permission of instructor. Not open to students with cr for 870.

**870.01\* Static Optimization in Planning G 5**

The use of mathematical programming techniques to solve planning problems.

Au Qtr. 2 2-hr cl, arr. Prereq: Permission of instructor and Math 568 or equiv.

**870.02\* Dynamic Optimization in Planning G 5**

Provides advanced graduate students with a sound foundation on a set of quantitative planning techniques in a dynamic context.

Wi Qtr. 2 2-hr cl. Prereq: 870.01 and Math 255 or equiv.

**870.03\* Forecasting and Simulation in Planning G 5**

Overview of advanced methods in forecasting and simulation and application to urban and regional planning.

Sp Qtr. 2 2-hr cl. Prereq: 762 and 771, or permission of instructor.

**871 Research Seminar in Environmental Planning**

Au, Wi, Sp Qtrs. 1 2-hr cl, arr. Prereq: Permission of instructor.

**871.01 Environmental Planning G 5**

Processes and concepts for the design planning and management of the natural and built environment.

Not open to students with credit for 871. Repeatable to a maximum of 15 cr hrs.

**871.02 Development Planning G 5**

Research problems associated with urban and regional development including economic development, planning in developing countries, and related issues; topics vary.

Not open to students with credit for 872. Repeatable to a maximum of 15 cr hrs.

**871.03 Regional Science G 5**

Development of theoretical and methodological issues in regional science as they pertain to urban and regional planning.

Not open to students with credit for 873. Repeatable to a maximum of 15 cr hrs.

**871.04 Planning Processes G 5**

Institutional factors which affect the field of planning; topics vary.

Not open to students with credit for 874. Repeatable to a maximum of 15 cr hrs.

**871.05 Mathematical Planning G 5**

Developmental topics in mathematical planning, and its applications to selected planning problems.

Not open to students with credit for 875. Repeatable to a maximum of 15 cr hrs.

**871.06 Energy Planning G 5**

Developmental topics in energy planning and its application to selected energy problems.

Not open to students with credit for 876. Repeatable to a maximum of 15 cr hrs.

**871.07 Transportation Planning G 5**

Survey of current literature, structured around a general theme which varies.

Not open to students with credit for 877. Repeatable to a maximum of 15 cr hrs.

**871.08 Public Services Planning G 5**

In-depth review of selected recent literature in the field; focus varies.

Not open to students with credit for 878. Repeatable to a maximum of 15 cr hrs.

**871.09 Environment-Behavior/Urban Design G 5**

Research on empirical aesthetics; seminal works, theories, and empirical findings.

Su, Au, Wi, Sp Qtrs. 4-hr cl. Not open to students with credit for 301 and 302. Repeatable to a maximum of 15 cr hrs.

**879 Seminar in Planning Research G 1-5**

Topics to be announced each quarter.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**881\* Foundations of Spatial Modelling in Planning G 5**

Analysis of behavioral foundations of spatial models.

Sp Qtr. 2 2-hr cl arr. Prereq: 781 recommended.

**893 Individual Studies G 1-5**

Individual studies for Ph.D. students in city and regional planning.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**990 Urban Planning Practicum G 1-5**

Supervised field experience in urban planning; analysis and critique of field experience.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in c&r plan. Repeatable to a maximum of 5 cr hrs.

**998 Research in City and Regional Planning Master's Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**999 Research in City and Regional Planning PhD Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: PhD standing. Repeatable. This course is graded S/U.

## Civil Engineering

470 Hitchcock Hall, 2070 Neil Avenue, 292-2771

**400 Intro: luction to Geomatics**

An introduction to geomatics, with an emphasis on basic data collection using ground-based measurement and basic engineering mapping techniques.

Au Qtr. Prereq or concur: 405, minimum CPHR of 2.0, civil en major; or written permission of dept. Not open to students with credit for 402, Survey 203. Needs both Civil En 400.01 and 400.03 to complete.

**400.01 Introduction to Surveying U 2**

An introduction to geomatics, with an emphasis on basic data collection using ground-based measurement techniques.

Au Qtr. 3 cl, 1 3-hr lab for 5 weeks. Cross-listed with Geod Sci 400.01. Course runs first half of quarter, for 5 weeks.

**400.03 Spatial Data Techniques for Civil Engineering U 2**

An introduction to geomatics, with an emphasis on spatial data collection and mapping techniques for civil engineers.

Au Qtr. 3 cl, 1 3-hr lab for 5 weeks. Course runs second half of the quarter, for 5 weeks.

**402 Surveying and Measurements in Civil Engineering U 4**

Introduction to surveying and measurement theories for civil engineering practice.

Au, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq or concur: 405, minimum CPHR of 2.00, and civil en major or written permission of dept chairperson.

**405 Observational Analysis U 5**

Theory and application of observational analysis.

Au, Sp Qtrs. 5 cl. Prereq: Chem 121, En Graph 142 or 167, Eng Mech H210 or 220 or 400, or Mech Eng H210 or 400 or 410, Math 254, Physics 133, a second writing course, a minimum CPHR of 2.00, civil en major; or written permission of dept chairperson. GEC course.

**406 Fundamentals of Civil Engineering Analysis U 5**

Application of numerical methods to problems in civil engineering.

Wi Qtr. 5 cl. Prereq: 405; minimum CPHR of 2.00; civil en major or written permission of dept chairperson. GEC course.

**410 Environmental Pollution and Control U 3**

Environmental pollution: the causes and control of air, water, and land pollution in relation to their effects on health, aesthetics, economics, and ecology.

Au Qtr. 3 cl. Prereq: Chem 101 or equiv with written permission of instructor. Not open to engineering majors or students with credit for 714.

**413 Fluid Mechanics U 4**

Fluid properties; fluid statics; flow concepts; continuity, energy, and momentum equations; dimensional analysis and dynamic similarity; viscous effects; drag; basic pipe flow; lab demonstrations and experiments.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Eng Mech 430 or Mech Eng 430; prereq or concur: Civil En 405 or standing as Agr Eng major; minimum CPHR of 2.0; or written permission of dept chairperson.

**431 Structural Engineering Principles U 3**

Structural forms, analysis of statically determinate structures, approximate analysis of indeterminate structures, and moving loads.

Au, Wi Qtrs. 3 cl. Prereq: Eng Mech 440 or Mech Eng 420 or 440; prereq or concur: Civil En 405; minimum CPHR of 2.00, and standing as a civil en major or written permission of dept chairperson.

**451 Civil Engineering Materials U 4**

Composition and structure of civil engineering materials; elastic, plastic, and viscous behavior under various environmental and loading conditions.

Au, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq or concur: 405, Eng Mech 420 or 440; minimum CPHR of 2.00, and standing as a civil en major or written permission of dept chairperson.

**460 Professional Aspects of Civil Engineering U 2**

Structure of the civil engineering profession; interaction of civil engineers with the education process, their clients, other professions and the public.

Wi, Sp Qtrs. 2 cl. Prereq: 406 and civil en sr standing. Must be taken as close to graduation as possible. GEC course. This course is graded S/U.

**489 Professional Practice U 2**

Actual employment in a co-op program job and the preparation of a comprehensive report based on a pre-arranged outline and a pre-assigned topic.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to co-op program in civil en. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**510 Principles of Hydraulics U G 3**

Fluid properties; hydrostatics; flow concepts; continuity, energy, and momentum equations and applications; flow measurements, pipe and channel flow.

Sp Qtr. 3 cl. Prereq: Math 151 and Physics 111 or 131. Not open to students with credit for 413. Majority of course will be conducted using self-paced programmed instruction manual.

**511 Introduction to Environmental Engineering U G 3**

Quantitative analysis of water, air, and noise pollution, hazardous waste management, ionizing radiation, occupational and environmental health engineering, and pollution prevention.

Sp Qtr. 3 cl. Prereq: Chem 122 or 125, and Math 152; acceptance as an engineering or environmental science major or permission of instructor.

**516 Water Resources Engineering U G 4**

Pipe systems, introduction to open channel flow, basic hydrology, demographic studies, water supply, and wastewater flows.

Wi Qtr. 4 cl. Prereq: 413 and En Graph 200 or En Graph 167 and civil en major.

**519 Applied Hydraulics U G 3**

Experimental and design laboratory for water supply collection, transmission, distribution and measurement systems, sewage and storm water collection, and disposal and measurement systems.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 516.

**520 Design of Treatment Facilities U G 4**

Selection and design of processes for the purification of natural and used waters.

Sp Qtr. 4 cl. Prereq: Chem 123 or 125.

**531 Structural Analysis U G 4**

Deflections in trusses, beams, and frames; solution of indeterminate structures by methods of consistent deformations, and moment distribution.

Au Qtr. 4 cl. Prereq: 431.

**532 Structural Steel Design U G 4**

Design of steel beams, columns, tensile members, beams-columns, connections, and plate-girders.

Au Qtr. 4 cl. Prereq: 431.

**534 Behavior of Structural Elements U G 4**

Mechanics of beams, shear center, unsymmetrical bending, columns, plastic bending, limit loads, properties of structural metals, and proportioning beams for flexure.

Sp Qtr. 4 cl. Prereq: 431.

**535 Basic Reinforced Concrete Design U G 5**

Analysis and proportioning of reinforced concrete members.

Wi, Sp Qtrs. 5 cl. Prereq: 431.

**540 Civil Engineering Systems U G 4**

Basic concepts and methods of systems engineering and applications to civil engineering problems in transportation and water resources planning, structural design, and construction management.

Au Qtr. 4 cl. Prereq: 405.

**552<sup>A</sup> Construction Materials U G 4**

Composition, properties, and production of portland cement concrete, bituminous materials, and bituminous mixtures.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 451.

**554 Geotechnical Engineering U G 4**

Properties of natural soil deposits and subsoil exploration; engineering solutions to problems of slope stability, foundation settlement, and earth pressure.

Sp Qtr. 4 cl. Prereq: Eng Mech 440 or Mech Eng 420 or 440; prereq or concur: Civil En 405; or standing as agricultural engineering major, or written permission of dept chairperson.

**570 Transportation Engineering and Analysis U G 4**

Introduction to topics in transportation engineering and analysis; geometric design, traffic flow, freeway capacity, traffic signals, demand-performance equilibrium, pricing, and design under uncertainty.

Wi Qtr. 4 cl. Prereq: Eng Mech 430 or Mech Eng 430; prereq or concur: Civil En 405, minimum CPHR of 2.00, and standing as civil en major, or written permission of dept chairperson.

**576 Civil Engineering Economics and Planning U G 4**

Engineering economics and theories of planning applied to private and public civil works.

Wi Qtr. 4 cl. Prereq or coreq: 406.

**590 Special Topics in Civil Engineering**

Studies in analysis, design, test, fabrication, and construction.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr standing in engineering or written permission of instructor.

**590.01 Steel Bridge Building Development U 2**

Repeatable to a maximum of 8 cr hrs.

**590.02 Timber Bridge Building Development U 2**

Repeatable to a maximum of 8 cr hrs.

**590.03 Concrete Canoe Development U 2**

Studies in analysis, design, test, and construction.

Repeatable to a maximum of 8 cr hrs.

**590.04 Environmental Engineering Process Development U 2**

Topics of special interest in environmental engineering process design.

Repeatable to a maximum of 8 cr hrs. Studies in the analysis, design, test, fabrication and construction of environmental engineering process.

**603 Remote Sensing of Environment U G 4**

The energies of the natural and cultural environment; current remote sensing systems and case histories of applications in measuring the environment.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Geod Sci 603. Cross-listed in Geodetic Science.

**604 Terrain Analysis U G 4**

Principles and applications of photo pattern analysis, geologic and geomorphologic patterns, terrain studies, and land use suitability and capability mapping.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Geod Sci 604. Cross-listed in Geodetic Science.

**606 Quantitative Remote Sensing U G 4**

An introduction to computer processing of digital image data from Landsat satellites; emphasis on concepts, techniques, and statistics important to numerical analysis.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 405 or equiv, 603 or 604 or 605, and En Graph 200 or 167 or equiv.

**607 Fundamentals of Geographic Information Systems U G 4**

Basic principles of geographic and land information systems and their use in spatial analysis and information management.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Sr standing. Not open to students with credit for Geog 685; or 607 in C&R Plan, Geod Sci, Geog, Geol Sci, or Nat Res. Cross-listed in City and Regional Planning, Geodetic Science, Geography, Geological Sciences, and Natural Resources.

**608<sup>\*</sup> Spatial Analysis Techniques in Civil Engineering U G 4**

Principles of spatial analysis techniques for application to civil engineering, particularly in the water resources and geotechnical areas.

Sp Qtr. 3 cl, 1 lab. Prereq: 405; 607; or equiv with written permission of instructor. Even years.

**610 Analysis of Natural and Polluted Waters U G 3**

A laboratory study of the measurement and interpretation of water quality indices and pollution parameters including BOD, COD, alkalinity, nutrients, PH, and heavy metals.

Au Qtr. 2 cl, 1 3-hr lab. Prereq: Chem 125 or 205 and Math 152 or equiv.

**613 Applied Hydrology U G 4**

Hydrologic cycle, meteorology, streamflow, evapotranspiration, hydrographs, runoff relations, runoff hydrographs, groundwater, unit hydrographs, flood routing, frequency and duration studies, and application of hydrologic techniques.

Au Qtr. 4 cl. Prereq: 510 or 516.

**618 Environmental Pollution U G 4**

Problems, principles, causes and control of pollution in the local, regional and global environment. Quantitative approaches to environmental problems in air, water, and land systems.

Wi Qtr. 4 cl. Prereq: Sr level standing & 15 hrs Natural science. Not open to students with credit for Natural Resources 618 or Zoology 618. Cross-listed in Natural Resources.

**620 Treatment Plant Design Laboratory U G 2**

A laboratory demonstration of the treatment processes discussed in 520 and an introduction to pilot-testing procedures for environmental engineering majors.

Wi Qtr. 1 cl, 1 3-hr lab. Prereq: 610; prereq or concur: 520.

**624 Coastal and Ocean Engineering U G 4**

Linear and nonlinear waves, water level and wave forecasting spectra, forces on fixed structures; beach processes, littoral drift, and transport; shoreline protection.

Wi Qtr. 4 cl. Prereq: 516.

**640 Civil and Environmental Systems Engineering U G 4**

Critical path method; linear, integer, and nonlinear programming simulation; mathematical modeling and optimization with design applications in civil and environmental engineering; research paper.

Au Qtr. 4 cl. Prereq: Permission of instructor. Not open to students with credit for 540.

**651 Soil Mechanics U G 4**

Stress-strain properties and shear strength of soils; settlement and stability analyses.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 554.

**653 Principles of Rock Mechanics U G 4**

Engineering properties of rock and their measurement; in-situ stresses; analysis of rock slopes, tunnels, underground openings, and foundations.

Sp Qtr. 3 cl, 1 1-hr lab, 1 1-day field trip. Prereq: 554. Not open to students with credit for Mng Engr 653.

**660 Civil Engineering Capstone Design U 4**

Culminating course for the design component of the curriculum for students in Civil Engineering.

Wi Qtr. 4 cl. Prereq: Sr standing. Must be taken as close to graduation as possible. This course is graded S/U.

**662 Introduction to Mechanics of Composite Structures U G 4**

An introduction to the macromechanical analysis of anisotropic composite structures including governing constituent equations, strength and stiffness advantages, and failure envelopes.

Au Qtr. 4 cl. Prereq: Eng Mech 440 or Mech Eng 420 or 440 or equiv, or permission of instructor. Not open to students with credit for Eng Mech 662 or Mech Eng 662. Cross-listed with Mechanical Engineering.

**670 Urban Public Transportation U G 4**

Planning, analysis, and operation of urban public transportation systems; description and analysis of novel systems.

Sp Qtr. 4 cl. Prereq: 570 or equiv with written permission of instructor.

**672 Traffic Engineering Studies U G 3**

Methods of collecting and analyzing traffic flow data, parking, driver and pedestrian behavior; reduction and evaluation of traffic data for applications in traffic engineering.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: 570 or equiv with written permission of instructor.

**673 Highway Location and Design U G 4**

Methods of highway route location; design standards for highways, intersections, freeways, and interchanges; discussion of computer programs for highway design.

Wi Qtr. 4 cl. Prereq: 570 or equiv with written permission of instructor.

**674<sup>^</sup> Airport Design and Operation U G 4**

Airport configuration, design, and capacity; development of the terminal area; operational aspect of air traffic and the terminal area; design and operation of heliports.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 570 or equiv with written permission of instructor.

**681<sup>^</sup> Construction Methods, Equipment and Performance U G 3**

Procedures, testing, and quality control in concrete operations; analysis of formwork and false work performance; advanced methods in the construction of hi-rise buildings, bridges, and other structures.

Au Qtr. 2 cl, 1 3-hr lab and field trip. Prereq: 431.

**682 Faults, Failures, and Forensics in Construction U G 4**

Design and construction operations; mechanisms of failures and accidents; methods of avoidance; and forensic engineering.

Au Qtr. 2 2-hr cl, 1 3-hr lab and field trips. Prereq: 431.

**684 Construction Network Analysis U G 4**

Planning, scheduling, and supervision of engineering construction projects; use of Critical Path Method, bar charts, and other techniques.

Wi Qtr. 2 cl, 2 2-hr lab. Prereq: 540.

**685 Deterministic Construction Estimating and Pricing U G 4**

Generally accepted models and methods of estimating and pricing; identification of causes of underestimating and underpricing.

Au Qtr. 2 2-hr cl. Prereq: 576.

**686 Construction Contracts and Claims U G 4**

Contract documents and specifications; formulation of contracts; offer, acceptance, breach, and damages; responsibilities and liabilities; claims; labor agreements.

Sp Qtr. 2 2-hr cl. Prereq or concur: 576 or equiv with written permission of instructor.

**687<sup>^</sup> Construction Project Administration U G 4**

Duties of professional construction managers in project administration; CM practices and methods; practical forms for project and office use.

Sp Qtr. 2 2-hr cl. Prereq: 576.

**693 Individual Studies U G 1-5**

Individual conferences, assigned readings, and reports on minor investigations.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Limitations on number of cr hrs applicable toward degrees are governed by departmental rules. This course is graded S/U.

**694 Group Studies in Civil Engineering U G 1-5**

The student must register for particular topics from fields of civil engineering listed below; the topics, cr hrs, and instructors will be announced in quarter previous to the quarter offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. Repeatable to a maximum of 15 cr hrs, not more than 10 of which shall be in any one of the following fields.

A— Structural Engineering

B— Geotechnical Engineering

C— Sanitary Engineering

D— Highway and Transportation Engineering

E— Remote Sensing and Environmental Surveys

F— Construction

G— Materials

I— Hydraulics and Hydrology

**711 Biological Processes for Used Water Treatment U G 4**

Principles and design of biological processes for used water treatment.

Wi Qtr. 4 cl. Prereq: 520 or equiv. Not open to students with credit for 811.

**713<sup>^</sup> Water Quality and Environmental Measurements U G 4**

The application of advanced physical and chemical measurement and calculation techniques to environmental engineering problems.

Wi Qtr. 4 cl. Prereq: 610 or permission of instructor.

**714 Hazardous Waste Management U G 3**

Environmental regulations; site remediation process; remedial alternatives; implementation; case studies.

Sp Qtr. 3 cl. Prereq: 520.

**715<sup>^</sup> Water Resource Systems: Water Supply U G 5**

Regional and municipal water supply design and management; water use, law, demand, pricing, supply alternatives, and allocation; and optimal system and component design.

Sp Qtr. 5 cl. Prereq: 516 and 540.

**717 Municipal and Industrial Solid Waste Management U G 4**

Characterization and sources of solid wastes; solid waste management; collection systems; processing; disposal; and recycle.

Sp Qtr. 4 cl. Prereq or concur: 520.

**718 Strategies for Industrial Environmental Management U G 3**

Industrial environmental management systems, audits, accounting, reports; industrial ecology; design for environment; ISO 9000, 14000, global competition; entrepreneurship; case studies.

Au Qtr. 1 3-hr cl. Prereq or concur: 540 or equiv with permission of instructor.

**719 Water Quality Modeling U G 3**

Stream and effluent standards for beneficial uses, and computer modeling of pollutant impacts on rivers.

Au Qtr. 3 cl. Prereq: 520 or equiv with written permission of instructor.

**720 Environmental Engineering Risk Assessment U G 3**

Basic methodologies for quantitative risk assessment and applications to a variety of contaminants, pathways, and engineering problem areas.

Wi Qtr. 3 cl. Prereq: 540 or grad standing.

**721<sup>^</sup> Design of Hydraulic Structures U G 4**

Basic engineering economic studies, water laws, design concepts, reservoir engineering, river training, spillways, and dissipators; hydromachinery.  
Sp Qtr. 4 cl. Prereq: 516.

**722 Open Channel Hydraulics U G 4**

Flow classifications, channel properties, energy and momentum principles, critical flow, uniform flow formulas, erodible and nonerodible channel design, and gradually varied flow profile computations.  
Sp Qtr. 4 cl. Prereq: 516.

**723 Transport Phenomena in Water Resources Engineering U G 4**

Water environment momentum mass energy transport, laminar and turbulent mixing; applications include river and lake pollutant dispersal, heated effluent plumes, eutrophication processes.  
Au Qtr. 4 cl. Prereq: 516 and Math 255 or 415, or equivalents. Not open to students with credit for 614.

**731<sup>\*</sup> Intermediate Reinforced Concrete Design U G 4**

Analysis and design of reinforced concrete systems.  
Sp Qtr. 4 cl. Prereq: 535.

**734<sup>\*</sup> Structural Analysis and Design for Dynamic Disturbances U G 5**

Structural dynamics; principles and practice of dynamic design; numerical and graphical methods.  
Au Qtr. 5 cl. Prereq: or concour: 532, Eng Mech 410, and grad standing, or sr standing with permission of instructor. Not open to students with credit for 834.

**735<sup>\*</sup> Matrix Structural Analysis U G 4**

Analysis of skeletal structures by force and displacement methods using matrices.  
Wi Qtr. 4 cl. Prereq: 531 or equiv with written permission of instructor.

**736<sup>^</sup> Bridge Engineering U G 4**

Principles and methods used in design and construction of bridge structures.  
Sp Qtr. 4 cl. Prereq: 531, 532, and 535; or equivalents.

**737<sup>^</sup> Prestressed and Precast Concrete Structures U G 4**

Structural analysis and proportioning of prestressed concrete members and precast structural concrete systems.  
Wi Qtr. 4 cl. Prereq: 531 and 535.

**738 Intermediate Structural Steel Design U G 5**

Structural behavior in the inelastic range; plastic analysis and design of framed structures; load and resistance factor design of steel structures.  
Wi Qtr. 5 cl. Prereq: 531 and 532.

**739 Knowledge-Based Systems in Engineering U G 3**

Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation.  
Sp Qtr. 2 1.5-hr cl. Prereq: Cptr/Inf 630 or permission of instructor. Cross-listed in Computer and Information Science; Chemical, Mechanical, and Nuclear Engineering.

**750 Seepage in Permeable Materials U G 4**

Analysis of seepage; saturated and partially saturated flow; free surface analysis; introduction to numerical techniques.  
Au Qtr. 4 cl. Prereq: 406 and 554.

**751 Principles of Foundation Analysis and Design U G 4**

Subsurface exploration; shallow foundations; piles and caissons; and embankments and excavations.  
Wi Qtr. 4 cl. Prereq: 651.

**753<sup>^</sup> Pavement Design and Materials U G 4**

Properties of paving mixtures, cementing binder and mixtures, and principles of pavement design and performance evaluation.  
Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 552.

**754<sup>^</sup> Mechanical Properties of Engineering Materials U G 4**

Elasticity, plasticity, viscoelasticity, fatigue, and fracture phenomena for civil engineering materials.  
Au Qtr. 4 cl. Prereq: 451.

**760 Civil and Environmental Engineering Planning U G 5**

Water resource planning process, benefit-cost analysis; environmental, economic, and social impacts of civil engineering projects; project selection; and case studies in water resources, transportation, and energy.  
Sp Qtr. 5 cl. Prereq: 516. Odd years.

**762 Structural Composites U G 3**

An introduction to the analysis and design synthesis of beams, columns, rods, plates, and panels made of structural composites.  
Wi Qtr. 3 cl. Prereq: 662 or Eng Mech 662 or Mech Eng 662 or permission of instructor. Not open to students with credit for Mech Eng 762 or Eng Mech 762. Cross-listed in Mechanical Engineering.

**768 Introduction to the Finite Element Method U G 4**

Basic concepts, formulation, and application of finite element techniques for numerical solution of problems in structural and continuum mechanics, geotechnical engineering, and water resources engineering.  
Au, Wi Qtrs. 4 cl. Prereq: 406 or Math 568 or equiv, and En Graph 167 or equiv. Not open to students with credit for 763 or Eng Mech 763 or Mech Eng 768. Cross-listed in Mechanical Engineering.

**771 Radioactive Waste Management U G 3**

Overview of radioactive waste management. Covers waste categories, sources, treatment and disposal methods, minimization, transportation and current research topics.  
Au Qtr. 3 cl. Prereq: Nuclr En 505 or Nuclr En 606 or permission of instructor. Cross-listed in Nuclear Engineering.

**774<sup>^</sup> Design and Operation of Road Traffic Facilities U G 5**

Traffic laws and ordinances; operational design of streets, intersections, parking, and terminal facilities; design and operation of traffic control devices.  
Wi Qtr. 4 cl, 1 3-hr lab. Prereq: 672.

**775 Urban Transportation Planning U G 4**

Discussion and examples of urban transportation planning processes, emphasizing quick-response models of locational and travel behavior, development and evaluation of alternatives, policies, and citizen reaction and participation.  
Au Qtr. 3 cl, 1 2-hr lab. Prereq: 576 and 670 or equivalents with written permission of instructor or grad standing in c&r plan. Not open to students with credit for C&R Plan 751 or 775. Cross-listed in City and Regional Planning.

**776 Network Algorithms in Transportation Systems U G 5**

Optimization algorithms for transportation problems that can be formulated as networks. Special attention to computer implementation in C++.  
5 cl. Prereq: 405, 540, and En Graph 167 or Cptr/Inf 201 or Cptr/Inf 221 or equiv. Students should have familiarity with a programming language such as FORTRAN, BASIC, Pascal or C. The laboratory component of this course will use the C++ language.

**777 Infrastructure Systems Analysis U G 4**

A systems approach to infrastructure provision and management. Covers data collection, performance assessment and prediction, inspection and maintenance decision making, and provision standards setting.  
Wi Qtr. 2 2-hr cl. Prereq: 540 and 576, or permission of instructor.

**781 Construction Risk and Decision Analyses U G 5**

Probability and regression models, decision model; reliability analysis; linguistic probability.  
Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 405 and 682.

**H783 Honors Research U 1-5**

Supervised research and project work arranged individually for honors students.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Honors standing; permission of instructor. Repeatable to a maximum of 12 cr hrs. Limitations on number of credit hours applicable toward degree are governed by departmental rules. This course is graded S/U.

**788 Computer-Aided Construction Automation and Simulation II U G 5**

Design and automate construction processes using computer simulations.  
Sp Qtr. 2 2-hr cl, 1 3-hr lab. Prereq: 781.

**795 Seminar in Civil Engineering U G 1**

Lectures and discussions of current topics related to civil engineering presented by faculty, students, and guest speakers; term paper required.  
Au, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

- A— Structural Engineering
- B— Geotechnical Engineering
- C— Environmental Engineering
- D— Highway and Transportation Engineering
- E— Remote Sensing and Environmental Surveys
- F— Construction
- G— Materials
- I— Hydraulics and Hydrology

**796 Interdepartmental Seminar Urban Transportation U G 1-5**

Lectures and discussions by faculty and guest speakers on topics related to urban transportation problems, issues, and new approaches to solutions; term paper required.

Au, Sp Qtrs. Prereq: Sr standing or permission of instructor. Repeatable to a maximum of 6 cr hrs. Given cooperatively by Civil Engineering and Industrial and System Engineering.

**797 Interdepartmental Seminars U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Sp Qtr. Repeatable.

**798 Current Topics in Environmental Science and Engineering U G 1**

Seminar course which presents current research findings on environmental quality and pollution control.

Au, Sp Qtrs. 1 cl. Prereq: Grad standing in engineer, science, nat res, or agr, or permission of instructor. Not available for simultaneous credit as Nat Res 798. Repeatable to a maximum of 3 cr hrs. Cross-listed in Natural Resources.

**804<sup>+</sup> Water Resources Engineering Applications of Remote Sensing G 5**

Principles and techniques of remote sensing for acquisition of data in water resources engineering projects and water quality investigations.

Sp Qtr. 3 cl, 2 3-hr labs. Prereq: 719 or 820.

**806 Radiometric Measurements and Modeling G 5**

Theory and models used in remote sensor measurements of spectral radiation.

Wi Qtr. 5 cl. Prereq: 603 or Geod Sci 603, and 604 or Geod Sci 604.

**808<sup>+</sup> Integrating Remote Sensing with Engineering Databases G 5**

Techniques and approaches for integrating digital data sources with engineering spatial databases.

Sp Qtr. 5 cl. Prereq: Civil En/Geod Sci 603 or 606 or written permission of instructor. Odd years.

**810 Physical Chemical Treatment Processes I G 4**

Principles and design of physical and chemical processes for water and wastewater treatment including mixing, disinfection, nutrient removal, and oxidation-reduction.

Au Qtr. 4 cl. Prereq or concur: 810.

**812<sup>+</sup> Physical Chemical Treatment Processes II G 4**

Principles of physical/chemical treatment processes for water and wastewater, including coagulation, softening, adsorption, filtration, and membrane processes.

Sp Qtr. 4 cl. Prereq: 610. Odd years.

**813 Hazardous Waste Site Remediation G 4**

Principles and design of hazardous waste site remediation technologies; removal and transformation processes; cost analysis.

Sp Qtr. Prereq: 610. Even years.

**814 Industrial Wastewater Treatment G 3**

Principles of industrial wastewater treatment including wastewater surveys; flow reduction, and segregation and equalization; batch and continuous treatment; instrumentation; and treatment processes.

Au Qtr. 3 cl. Prereq: 711 and 812, prereq or concur: 810.

**815<sup>+</sup> Advanced Water Resource Systems: Water Quantity G 5**

Advanced topics in the design and management of surface and groundwater systems; use of mathematical programming, simulation, and economic theory; written and oral presentations.

Sp Qtr. 5 cl. Prereq: 715.

**816 Environmental Systems Analysis G 5**

Optimization models for water quality and air quality control, solid waste and hazardous waste management, and environmental and energy facility siting.

Sp Qtr. 5 cl. Prereq: 540 or Ind Eng 842 or equiv. Not open to students with credit for 720. Even years.

**817 Applied Mathematical Ecology G 5**

Application of the methods of mathematical ecology to problems of environmental engineering.

Wi Qtr. 5 cl. Prereq: Permission of instructor. Not open to students with credit for 885I. Repeatable to a maximum of 10 cr hrs. Cross-listed in Natural Resources.

**818 Application of Biotechnology to Environmental Engineering G 5**

Application of molecular and microbiological techniques for pathogens and monitoring of hazardous substances; manipulation of microorganisms for remediation of contaminated soil and water.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq: 610 and Microbiol 509; or permission of instructor.

**820<sup>+</sup> Advanced Hydrology G 5**

Advanced analysis of classical concepts; study of new techniques and concepts developing in modern hydrology; written and oral presentations of critical reviews of current literature.

Wi Qtr. 5 cl. Prereq: 613 or equiv.

**821<sup>+</sup> Sediment Transport and Engineering G 4**

Sediment properties, fall velocity; entrainment, resuspension, bed features, meanders, channel roughness, suspended, and bed load; measurement; siltation ponds, reservoirs, channel mechanics, bank protection, and stabilization.

Sp Qtr. 4 cl. Prereq: 723. Even years.

**823<sup>+</sup> Numerical Models in Water Resources Engineering G 5**

Lake, river, and coastal contaminant or heat numerical transport model formulation; averaging; finite difference, element methods; errors, stability; data requirements, verification procedures.

Wi Qtr. 5 cl. Prereq: 723 or permission of instructor. Odd years.

**824<sup>+</sup> Advanced Coastal Engineering G 4**

Coastal turbulent transport processes; fluctuation spectra; flood forecasting, storm surge models; harbor oscillations, resonance, and design; erosion processes and protection strategies; topical problems as required.

Wi Qtr. 4 cl. Prereq: 624 and 723. Even years.

**830 Earthquake Engineering G 5**

Analysis and design of structures subject to seismic loading; design of structures to minimize earthquake damage; highrise buildings; seismic risk analysis; knowledge engineering in earthquake engineering.

Wi Qtr. 5 cl. Prereq: 734.

**831<sup>+</sup> Advanced Reinforced Concrete G 5**

Concrete structural analysis and design; special structural systems and elements.

Au Qtr. 5 cl. Prereq: 731 and 737.

**832 Advanced Behavior and Design of Metal Structures G 5**

Design of steel structures; steel bridges; braced and unbraced frames; tall buildings; connections; load and resistance factor design; computer-aided design; stability of metal structures; torsion; and lateral-torsional buckling.

Sp Qtr. 5 cl. Prereq: 532 and 738.

**833<sup>+</sup> Concrete Shell Structures G 5**

Analysis and design of folded plate, cylindrical shell, axisymmetric and doubly curved shell structures including domes, hyperbolic and elliptical paraboloids.

Sp Qtr. 5 cl. Prereq: 735 and Math 512.

**836<sup>+</sup> Advanced Matrix Analysis of Structures G 5**

General force methods of analysis; formulation of non-linear behavior of trusses and frames; solution of non-linear structures; analysis of surface structure; application of finite element methods in structural analysis.

Sp Qtr. 5 cl. Prereq: 735.

**837<sup>+</sup> Advanced Structural Dynamics G 5**

Stresses and deflections in structures under dynamic loads; response of large structural systems to earthquake, wind, moving loads; approximate and exact solution techniques.

Sp Qtr. 5 cl. Prereq: 734 or Eng Mech 731 or Mech Eng 731.

**838<sup>+</sup> Two-Dimensional Problems in Linear Solids G 4**

Solution of two-dimensional boundary value and initial boundary value problems for linear solids; geometric nonlinearities; refined theories; variational principles; approximate and exact solution techniques.

Wi Qtr. 4 cl. Prereq: 856 and Eng Mech 740 and 754 or Mech Eng 740 and 755.

**839<sup>+</sup> Finite Element Method in Engineering Science G 5**

Approximation of boundary value and initial value problems; variational methods, hybrid and mixed method; convergence and accuracy of finite element approximations; recent developments, advanced applications.

Sp Qtr. 5 cl. Prereq: 763 or 768 or Eng Mech 763 or Mech Eng 763 or 768 and Math 601 or equiv. Not open to students with credit for Eng Mech 839 or Mech Eng 839. Cross-listed in Mechanical Engineering.

**850 Advanced Seepage in Permeable Materials G 4**

Analysis of seepage and consolidation in soils by closed form and by numerical methods.

Au Qtr. 4 cl. Prereq: 750.

**851 Advanced Soil Properties G 4**

Detailed study and analysis of the mechanical properties of soils, with applications to foundation behavior.

Au Qtr. 4 cl. Prereq: 651.

**852<sup>A</sup> Advanced Civil Engineering Materials G 4**

Analysis and design of materials for pavements and other civil engineering projects; properties considered include fracture, fatigue, and physical-chemical composition.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 753 and 754.

**853 Advanced Soil Mechanics G 4**

Stability of slopes and foundations; use of plasticity theory, numerical methods, and probability methods.

Wi Qtr. 4 cl. Prereq: 851.

**855<sup>A\*</sup> Soil-Structure Interaction G 4**

Interactions between soil and various structures, walls, bulkheads, foundations, and piles.

Au Qtr. 4 cl. Prereq: 851.

**856<sup>A\*</sup> Viscoelasticity G 4**

Viscoelastic materials and their characteristics, discrete element models, spectral representation, creep and relaxation functions, and dynamics of viscoelastic behavior.

Wi Qtr. 4 cl. Prereq: 754 and Math 512.

**858 Soil Dynamics G 4**

Stress waves in soils and vibrations in soil masses; liquefaction, determination of dynamic properties of soils; soil behavior under impact, machine, and seismic loads; seismic response of earth structures; design problems.

Sp Qtr. 4 cl. Prereq: 851 and Eng Mech 731, or permission of instructor.

**859 Advanced Soil Properties Laboratory G 2**

Experimental methods to evaluate the engineering properties of soils.

Wi Qtr. 1 cl, 1 3-hr lab. Prereq or concur: 851.

**862<sup>\*</sup> Advanced Mechanics of Structural Composites G 3**

An introduction to current important topic areas in structural composites; among these topics are fracture mechanisms and models, energy method modeling, dynamic structural response, and numerical modeling schemes.

Sp Qtr. 2 1.5-hr cl. Prereq: 762 or Eng Mech 762 or Mech Eng 762. Not open to students with credit for Eng Mech 862 or Mech Eng 862. Cross-listed in Mechanical Engineering. Offered even years.

**872 Area Traffic Control G 5**

Design and performance criteria for area traffic control; design of traffic surveillance and monitoring systems; corridor and network control strategies; on-line computer control algorithms.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq: 774 or equiv.

**873 Urban Transportation Demand Forecasting G 5**

Travel surveys and data needs; applications of statistical methods to develop models of ownership, trip generation, vehicle occupancy and modal choice; disaggregate models.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: 775 and Stat 525 or equiv with written permission of instructor.

**874 Urban Transportation Network Analysis G 5**

Network representation methods; minimum-path trees; traffic assignment algorithms and their performance; trip distribution models; new directions.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 775 and Stat 525 or equiv with written permission of instructor. Not open to students with credit for Ind Eng 874. Cross-listed in Industrial and Systems Engineering.

**878 Transportation Management Systems G 5**

Key concepts in transportation management and the role of network performance and demand. Covers control and guidance systems design and evaluation. Emphasizes methodology and modeling.

Au Qtr. 2 2.5-hr cl. Prereq or concur: 776, or permission of instructor.

**881 Computer Aided Construction Automation and Simulation I G 5**

Computer modeling to automate and simulate construction operations.

Wi Qtr. 2 2-hr cl, 1 hr arr. Prereq: 682.

**882<sup>A</sup> Probabilistic Construction Estimating and Pricing G 5**

New models and methods of estimating and pricing; the examination of data from contracting companies; the utility of percentile distributions, skewness and kurtosis demonstrations.

Sp Qtr. 3 cl, 6-hrs lab. Prereq: 685, Stat 525, and Bus Adm 801.05 or equivs.

**883<sup>A\*</sup> Design of Construction Operations G 5**

Computer assisted construction operations decisions; traditional approaches; linear optimization and simulation case studies.

Au Qtr. 3 cl, 6-hrs lab. Prereq: 882.

**884<sup>A\*</sup> Construction Forensics G 5**

Construction engineers as expert witnesses and consultants on prevention and resolution of disputes; investigations, pre-trial examination; governmental and private sector case studies.

Au Qtr. 3 cl, 6-hrs lab. Prereq: 882 and 888.

**885 Advanced Civil Engineering G 3-5**

Opportunity for advanced students to pursue advanced study; work undertaken may be elected in the fields of civil engineering listed below. Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 20 cr hrs. No more than 10 credit hrs in any one of the fields listed below.

A— Structural Engineering

B— Geotechnical Engineering

C— Sanitary Engineering

D— Highway and Transportation Engineering

E— Remote Sensing and Environmental Surveys

F— Construction

G— Materials

J— Hydraulics and Hydrology

**888 Event Tree, Fault Tree, and Fuzzy Systems in Construction G 5**

Event tree and fault tree analyses; fuzzy set/logic concepts; fuzzy expert systems; fuzzy fault tree expert systems in construction.

Sp Qtr. 4 cl, 1 3-hr lab (arr). Prereq: 781.

**894 Group Studies in Civil Engineering G 3-5**

Advanced topics in the various fields of civil engineering; the particular topics, the number of credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. No more than 10 cr hrs in any one field of civil engineering.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

**990 Civil Engineering Practicum G 1-5**

Supervised field experience in civil engineering; analysis and critique of field experience.

Su, Au, Wi, Sp Qtrs. Prior approval of civil en grad committee required.

**993 Advanced Problems in Civil Engineering G 3-5**

Provides the opportunity to pursue special problems in Civil Engineering not otherwise covered. Report required.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research in Civil Engineering G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Classics

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See also Greek, Latin, Medieval and Renaissance Studies, and Modern Greek.

**101 Masterpieces of Greek Literature in Translation U 5**

Introductory survey of the Greek achievement in literature and its contribution to Western thought; selected readings in English translation in major authors from Homer through the Hellenistic age.

Au, Wi, Sp Qtrs. 5 cl. H101 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 220. GEC arts and hums lit course.

**102 Masterpieces of Latin Literature in Translation U 5**

Introductory survey of Roman literature and its importance in the Western literary tradition; selected readings in English translation in major authors, such as Plautus, Vergil, and Ovid.

Wi Qtr. 5 cl. H102 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 221. GEC arts and hums lit course.

**150 Latin and Greek Elements in English Vocabulary U 3**

Study of the flow of Latin and Greek elements into English vocabulary and of the processes of word formation using these elements.

3-hr cl.

**210 Classical Background of Scientific Terminology U 3**

Study of technical and scientific terms from Greek and Latin sources; roots, word elements, word formation, analysis; helpful in medical, biological, and kindred studies.

Au, Wi, Sp Qtrs.

**222 Classical Mythology U 5**

Origins and attributes of the Greek and Roman gods and goddesses, their mythology and its influence on Western culture.

Au, Wi, Sp Qtrs. 5 cl. H222 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for H122. GEC arts and hums lit course.

**H223 Freshman/Sophomore Honors Seminar: Topics in Ancient Literature and Society U 5**

A discussion-oriented exposure to some of the most renowned works of ancient literature and/or ancient cultural issues.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Admission to the honors program.

**224 Classical Civilization: Greece U 5**

A survey of ancient Greek civilization, concentrating upon important facets of literature, history, art, and archaeology.

Wi Qtr. 5 cl. Not open to students with credit for H124. GEC arts and hums cultures and ideas course.

**225 Classical Civilization: Rome U 5**

A survey of the civilization of ancient Rome, concentrating upon important facets of literature, history, art, and archaeology.

Au Qtr. 5 cl. Not open to students with credit for H125. GEC arts and hums cultures and ideas course.

**226 Sailing to Byzantium: An Introduction to Medieval Constantinople U 5**

The cultural legacy of Byzantium; popular culture, court life, art, and literature seen through the eyes of Byzantines and Western travelers.

Wi Qtr. 2 2-hr cl. Not open to students with credit for Medieval 226. Cross-listed in Medieval and Renaissance Studies. GEC arts and hums cultures and ideas course.

**240 Classical Archaeology U 5**

Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites.

5 cl. Not open to students with credit for History 240 or 306, or Hist Art 240. Cross-listed in History as 306 and in History of Art as 240. GEC arts and hums cultures and ideas course.

**294 Group Studies U 1-5**

Topics in classical studies.

H294 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**301^ Greek and Roman Epic U 5**

Study of Greek and Roman epic based on extensive readings in English translation.

Au Qtr. 5 cl. Not open to students with credit for 503.

**302 Greek and Roman Drama U 5**

Study of Greek and Roman drama based on extensive readings in English translation.

Wi Qtr. 5 cl. Not open to students with credit for 501.

**303 Comic Spirit in Antiquity U 5**

Study of the comic literature of the Greco-Roman world based on extensive readings in English translation drawn from epic, drama, satire, and the novel.

5 cl. Not open to students with credit for 502.

**322 The Hero in Classical Mythology U 5**

The development and interpretation of the major cycles of classical saga based on extensive readings in Greek and Roman epic and drama.

5 cl. Prereq: 222. Not open to students with credit for 223.

**323^ Religion in the Greco-Roman World U 5**

Study of Greek and Roman religious movements including the beginnings of Christianity; readings in English translation of the major primary texts.

5 cl. Not open to students with credit for 504.

**326 Christian Heroes: Byzantine Saints' Lives U 5**

Study of popular Medieval narrative genre in its cultural context; development of the ideal of sanctity in the lives of martyrs, holy fools, and ascetics.

Wi Qtr.

**505^ Political Thought and Institutions in the Greco-Roman World U G 5**

Selected topics concerning the development of ancient political theory.

2 2-hr cl.

**506^ Greek and Roman Science and Technology U G 5**

The origins and achievements of Greek and Roman science and technology.

5 cl.

**508 Women in Greece and Rome U G 5**

Roles of women in ancient society, literature, and art.

Sp Qtr. 5 cl.

**607\* Roman Law through the Reign of Justinian U G 5**

Studies in the origins and development of Roman Law based on original sources in translation.

5 cl. Not open to students with credit for Law L720. Cross-listed in Law as L720.

**611^ Studies in Greek or Latin Epigraphy U G 5**

2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for 811. Repeatable to a maximum of 10 cr hrs.

**692 Workshop U G 1-6**

Su Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**694 Group Studies U G 1-5**

Investigation of particular problems in various areas of classical studies.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15****698.02 Foreign U G 1-15****699 Senior Tutorial and Essay U 5**

Individual work leading to the writing of a final paper that will integrate the experience of earlier courses in classics.

Su, Au, Wi, Sp Qtrs. Open only to srs majoring in classics.

**H783 Honors Research U 3-5**

A program of study arranged for each student, with individual conferences, reports, and an honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the classics courses taken and with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. With permission of dept.

**800 Materials and Methods of Research G 3**

The materials, problems, and methods of classical research.

3 cl. Required of all grad students.

**801 Materials and Methods of College Teaching of Classics G 3**

Methods and techniques for teaching Latin, Greek, and courses in classical subjects at the college level.

Two wks intensive workshop previous to the beginning of qtr. This course is graded S/U.

**810^ Linguistic Studies in Greek and Latin G 5**

Topics may include Greek dialects, Italic dialects, or comparative grammar of Greek and Latin.

2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**812^ Studies in Greek or Latin Paleography and Textual Criticism G 5**

A study of Greek or Latin handwriting in ancient documents and later manuscripts and the principles of textual criticism.

1 3-hr cl. Repeatable to a maximum of 10 cr hrs.

**856^ Studies in Greek or Roman Topography G 5**

The topography and archaeology of ancient Athens, Rome, or other sites important to Greco-Roman literature and civilization.

2 2-hr cl. Repeatable to a maximum of 10 cr hrs.



**870 Studies in Greek and Roman Religion and Myth G 5**

Focuses on single issues within ancient religion and myth, as chosen by instructor.

Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Reading knowledge of Greek and/or Latin preferred; special arrangements can be made for exceptional students without reading knowledge. Repeatable to a maximum of 10 cr hrs.

**880 Topics in Classical Antiquity G 5**

In-depth examination of issues that are often difficult to address in courses that focus on a single ancient author.

Au, Wi, Sp Qtrs. 1 3-hr cl. Repeatable to a maximum of 15 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs. With permission of dept.

## Comparative Studies in the Humanities

308 Dulles Hall, 230 West 17th Avenue, 292-2559

See also Religious Studies.

**100 Introduction to the Humanities: Cross-Cultural Perspectives U 5**

Explores the role of literature and the arts in constructing, maintaining, and questioning the values and beliefs of diverse cultures and historical periods; topics vary.

H100 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums lit course.

**201 Literature and Society U 5**

Study of relationships among politics, society, and literature; analysis of social and political elements of literature and film from diverse cultures and historical periods.

H201 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for 101, 201, 202, 203, and 204 may be taken independently. GEC arts and hums lit course.

**202 Religious Studies**

Prereq: English 110 or 111 or equiv. 201, 202, 203, and 204 may be taken independently. GEC arts and hums lit courses.

**202.01 Literature and Religion U 5**

Study of relationships between religion and secular literature; analysis of religious and spiritual elements of literature and film of diverse cultures and historical periods.

H202.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 102 or 102.01.

**202.02 Comparative Sacred Texts U 5**

Introduction to religious views of the universe, the supernatural, social organization, ethics, etc., through sacred texts (oral and written) of diverse cultures and historical periods.

Not open to students with credit for 102.02.

**203 Literature and the Self U 5**

Study of relationships between psychology and literature; analysis of psychological concepts and processes as represented in literature and film of diverse cultures and historical periods.

H203 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for 103, 201, 202, 203, and 204 may be taken independently. GEC arts and hums lit course.

**204 Literature, Science, and Technology U 5**

Study of relationships among literature, science, and technology; analysis of representations of science and technology in literature and film of diverse cultures and historical periods.

H204 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for 104, 201, 202, 203, and 204 may be taken independently. GEC arts and hums lit course.

**208 Utopia and Anti-Utopia U 5**

Utopia and critiques of utopian thinking: the conflict between utopian planning and individual freedom in works by such authors as Plato, More, Huxley, and Skinner.

H208 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for 213.

**234 American Icons U 5**

Interdisciplinary methods in American studies; emphasis on the plurality of identities in American culture.

Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas, and social diversity course.

**239 City and Country in America U 5**

Interdisciplinary perspectives on the development, accuracy, and influence of popular images and stereotypes of city and country.

Prereq: Soph standing and English 110 or 111 or equiv.

**H240 The Nature of Modernity: Key Ideas and Enduring Problems U 5**

Examination of some of the defining ideas of modern thought and how those ideas have problematically affected modern life in both developed and developing countries.

GEC arts and hums lit course.

**241 Introduction to Asian American Studies U 5**

Introduction to Asian American studies; history, experiences, and cultural production of Americans of Chinese, Japanese, Korean, South Asian, Filipino, and Southeast Asian ancestry.

2 2-hr cl. Prereq: English 110 or 111 equiv. GEC arts and hums cultures and ideas, and social diversity course.

**242 Introduction to Latino/a Studies U 5**

Introduction to Latino/a studies; history, politics, and cultural production of Latino/a communities in the U.S. and its borderlands.

2 2-hr cl. Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas, and social diversity course.

**270 Introduction to Comparative Religion U 5**

Introduction to the academic study of religion through comparison among major traditions (Judaism, Christianity, Islam, Hinduism, Buddhism, etc.) and smaller communities.

H270 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for Rel Stds 270. Cross-listed in Religious Studies. GEC arts and hums cultures and ideas course.

**272 Science and Society U 5**

Critical analysis of the multiple relations of science to society, with emphasis on knowledge, power, authority, values, and ethics.

Sp Qtr. 2 2-hr cl. Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

**273 Introduction to Comparative Literature U 5**

Analysis of oral and written literatures of diverse cultures and historical periods; their relation to such issues as cultural difference, national identity, and textual authority.

Prereq: English 110 or 111 or equiv. GEC arts and hums lit course.

**293 Individual Studies U 2-5**

Designed to give students an opportunity for personal study with a member of the faculty.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

H294 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**298 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**298.01 Domestic U 1-15**

Repeatable.

**298.02 Foreign U 1-15**

Repeatable.

**301 Love in World Literature U 5**

Representations of love in world literature; emphasis on mythological, psychological, and ideological aspects of selected representations in different cultures and time periods.

H301 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 5 cr hrs in literature and English 110 or 111 or equiv. GEC arts and hums lit course.

**305 Medicine and the Humanities U 5**

Humanistic, scientific, and clinical perspectives on medical issues; literary uses of medical themes; medicine as art and science.

Prereq: Soph standing and English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

**306 The Quest in World Literature U 5**

Motif of the quest in world literature; physical and mental journeys as metaphors of personal transformation and salvation.

Prereq: English 110 or 111 or equiv. GEC arts and hums lit course.

**308 Representations of the Experience of War U 5**

Representations of war in works of literature, religious texts, and film from diverse cultures and time periods.

Prereq: English 110 or 111 or equiv. GEC arts and hums lit course.

**314 Women in East Asian and Asian-American Literature U 5**

Critical analysis of East Asian and Asian-American women's experience, examining gender and sexual differences in the distribution of political power and discourse.

Prereq: English 110 or 111 or equiv. GEC arts and hums lit course.

**315 Women and Religion U 5**

Modern women writers' search for feminist alternatives to traditional and patriarchal religious beliefs.

Prereq: 5 cr hrs in literature or wom stds, and English 110 or 111 or equiv.

**335 Engineering in Global Perspective U 5**

Examination of the social context of engineering in cross-cultural perspective; includes ethnographic and historical studies of engineering practices from both western and non-western nations.

Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

**345 South Asian American Religion and Culture U 5**

Historical overview and critical discussion of South Asian American identity; focus on religious identity, ethnicity, nationalism, globalism, gender.

2 2-hr cl. Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

**358 Film and Literature as Narrative Art U 5**

Relationships between film and literature; emergence of cinematic art as a form of representation with emphasis on diverse cultural traditions.

Prereq: 5 cr hrs in literature or comp std. GEC arts and hums VPA course.

**367 Second Writing Course**

GEC second writing and social diversity courses.

**367.01 American Identity in the World U 5**

American culture viewed from inside and from the perspective of foreign cultures, as seen in literature, film, art, music, journalism, folklore, and popular culture.

H367.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv, and soph standing.

**367.02 Values, Science, and Technology in American Culture: An Introduction U 5**

Role of science and technology in contemporary American society; their relationship to human values; sources of concern about their impact; evaluation of selected issues.

H367.02 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv; Math Placement level R or above, or completion of or concur enrollment in GEC science sequence; and soph standing.

**367.03 Religious Diversity in America U 5**

Exploration of the concept of religious freedom and the position of minority religious groups in American society.

Prereq: English 110 or 111 or equiv, and soph standing.

**367.04 U.S. Latino/a Identity U 5**

Latino/a identity in the U.S.; emphasis on Latino/a cultural history and expression and on role of race, class, gender, and sexuality in identity construction.

Prereq: English 110 or 111 or equiv, and soph standing.

**470 Folklore of the Americas U 5**

Comparative study of folklore and folk groups of the Americas; topic varies: folk narratives, beliefs, customs, practices of Latino/a, Asian, African, Native, and Anglo cultures.

Prereq: English 110 or 111, or equiv. Repeatable to a maximum of 15 cr hrs.

**498 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**498.01 Domestic U 1-15**

Repeatable.

**498.02 Foreign U 1-15**

Repeatable.

**500 Conceptual Approaches to International Studies U 5**

Exploration of classic and contemporary conceptual approaches to international studies used by anthropologists, economists, geographers, historians, political scientists, and psychologists.

Prereq: 15 cr hrs of course work in one or more relevant disciplines and permission of instructor. Not open to students with credit for Int Stds 500. Cross-listed in International Studies.

**510 The 20th-Century Novel: Transnational Contexts U G 5**

Analysis of 20th-century fiction from western and nonwestern traditions: issues include colonialism, post-colonialism, nationalism, capitalism, revolution, migration.

**513 European Intellectual and Cultural History**

Cross-listed in History.

**513.01 The Age of Modernity in the 19th Century U G 5**

Intellectual and cultural history in Europe in the 19th century with emphasis on historic events which marked the formation of historical consciousness in the 19th century.

Wi Qtr. Not open to students with credit for 622.01, or History 513.01 or 622.01.

**513.02 The Age of Modernity in the 20th Century U G 5**

Intellectual and cultural history in Europe in the 20th century with emphasis on historic events which marked the formation of historical consciousness in the 20th century.

Sp Qtr. Not open to students with credit for 622.02, or History 513.02 or 622.02.

**526 New Age and New Religious Movements U G 5**

Study of new age and new religious movements in contemporary American culture.

Prereq: 5 cr hrs in comp std or rel std or grad standing.

**531 The City and Culture U G 5**

Introduction to the comparative and cross-cultural study of cities, urban culture, and urbanism.

Prereq: One course in comp std or int stds, or grad standing, or permission of instructor. Not open to students with credit for Int Stds 531. Cross-listed in International Studies.

**535 Gender and Science U G 5**

Examination of relations between gender and science; topics include gendering of "science" and "nature," biological theories of sexual inequality, feminist critiques of science and technology.

Prereq: One course in comp std or wom stds. Not open to students with credit for Wom Stds 535. Cross-listed in Women's Studies.

**541 Myth and Ritual U G 5**

Ritual, myth, and literature: structural and thematic relationships.

Prereq: 10 cr hrs in literature or grad standing.

**542 Native American Identity U G 5**

Historical and contemporary issues of American Indian identity, primarily in U.S.; focus on American Indian authors, artists, and scholars.

2 2-hr cl. Not open to students with credit for this topic under 651 or 694.

**597 Issues of the Contemporary World**

Au, Wi, Sp Qtrs. 2 2-hr cl. GEC contemporary world courses.

**597.01 Global Studies of Science and Technology U 5**

Explores relations among culture, science, and technology in changing global contexts.

Prereq: Sr standing and completion of GEC second writing course, quantitative and logical skills requirement, and natural science sequence; or permission of instructor; 367.02 recommended. Not open to students with credit for 597.

**597.02 Global Culture U 5**

Examines contemporary global cultural flows, the concepts useful in analyzing them, and the questions they raise about power and cultural change.

Prereq: Sr standing or permission of instructor.

**645 Studies in Korean-American Literature U G 5**

Critical study of Korean-American literature and literary genres of the twentieth century, with particular attention to historical, social and cultural contexts.

Prereq: 10 cr hrs in literature or grad standing or permission of instructor. Not open to students with credit for Korean 645. Cross-listed in Korean.

**651 Topics in Comparative Studies U G 5**

Critical study of selected themes and topics in a comparative and cross-cultural perspective; emphasis on issues of method, critical theory, representation, power, knowledge, and authority.

Prereq: One course in comp std or rel stds; or grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**660 Modernism: Its Origins and Development in 20th-Century Culture and Politics U G 5**

Origins and development of the modernist sensibility in 20th-century art, literature, social theory, and politics.

Prereq: Jr standing or permission of instructor. Not open to students with credit for this topic under 694.

**677 Studies in World Folklore**

Prereq: English 270 or grad standing.

**677.01 Genres of Folk Literature U G 5**

Historical and cross-cultural study of genre theory; comparative study of specific genres of folk literature, e.g., fairy tales, folk tales, legends, epics, and jokes.

Repeatable to a maximum of 10 cr hrs.

**677.02 Themes in World Folklore U G 5**

Cross-cultural, cross-genre study of folklore themes; e.g., folklore of sex, folklore of religion; multidisciplinary perspective employs anthropological, psychological, and literary theory.

Repeatable to a maximum of 10 cr hrs.

**677.03 Folk Custom, Art, and Material Culture U G 5**

Study of folk customs, arts, and material culture; theoretical emphasis on structural affinities of these with other folk forms, including verbal art, ritual, festival, folk religion.

Repeatable to a maximum of 10 cr hrs.

**677.04 Comparative Folk Groups U G 5**

Comparative study of ethnic, regional, religious, kin, occupational, age or sex groups; emphasis on range of historical and contemporary theoretical perspectives used to understand groups.

Repeatable to a maximum of 10 cr hrs.

**678 Studies in Chinese-American Literature U G 5**

Critical study of modern Chinese-American literature in historical and cultural context; topics vary: gender issues, genre studies, women's writing.

Prereq: 10 cr hrs in any literature or grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in Chinese 678. Cross-listed in Chinese.

**693 Individual Studies U G 1-10**

Designed to give able students an opportunity to pursue special studies not otherwise offered.

Prereq: Jr standing and permission of chairperson. Not open to freshmen or sophomores. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 3-5**

Special topics.

Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**710 Approaches to Comparative Cultural Studies I G 5**

Historical perspectives on modernity and difference; introduction to issues and methods involved in situating and comparing authoritative discourses (literary, religious, scientific) and other cultural processes.

Au Qtr. Prereq: Grad standing or permission of instructor.

**711 Approaches to Comparative Cultural Studies II G 5**

Contemporary practices of contextualization and comparison; exploration of issues and methods involved in situating and comparing authoritative discourses (literary, religious, scientific) and other cultural processes.

Wi Qtr. Prereq: Grad standing or permission of instructor.

**730 Culture, Science, and Technology U G 5**

Introduction to comparative and cultural studies of science and technology.

Prereq: 711 or permission of instructor.

**739 Comparative Constitutional Politics G 5**

Compares constitutions and constitutionalism across cultures and through different disciplines with special attention to how people make claims to secure their rights and interests.

Au Qtr. Prereq: Grad standing or permission of instructor. Not open to students with credit for History 739. Cross-listed in History.

**770 Introduction to Graduate Study in Folklore**

A two-course sequence in current scholarship and methods necessary for advanced study in folklore.

Cross-listed in English.

**770.01 Approaches and Research Methods G 5**

Bibliography, research, and critical approaches for the advanced study of folklore.

Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor. Not open to students with credit for English 770.01.

**770.02 Field Research G 5**

Methods and theory of field research and field ethics necessary for advanced study in folklore.

Prereq: Grad standing or permission of instructor. 770.01 or English 770.01 recommended. Not open to students with credit for English 770.02.

**H783 Honors Research U 5-10**

Senior honors course leading to graduation with distinction; independent study for the student with special aptitude.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the comp std courses taken and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 10 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**790 Foundations of Contemporary Critical Theory U G 5**

Interdisciplinary survey of the theoretical bases of major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.

Prereq: Jr or sr or grad standing. Cross-listed in English, French, German, Italian, and Spanish.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Arr. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

**830 Science and Difference G 5**

Explores scientific constructions of difference (racial, gender, sexual, cultural) and the consequences of difference for the making of science.

Prereq: 730 or permission of instructor.

**890 Interdepartmental Studies in Critical Theory G 5**

Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.

Repeatable to a maximum of 10 cr hrs. Background in critical theory recommended. Cross-listed in English, French, German, Spanish, and Women's Studies.

**998 Research in Comparative Studies: Thesis G 1-18**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Computer and Information Science

395 Dreese Lab, 2015 Neil Avenue, 292-5813

Enrollment Priority

In 200-level and above Cptr/Inf courses, enrollment priority will be given to Cptr/Inf majors in Engineering and Arts and Sciences and to Information Systems majors in Business.

**100 Introduction to Computing Technology U 3**

A course of general interest giving experience with personal computer software, e.g., word processors and spreadsheets; provides fundamental computer literacy; neither teaches nor requires computer programming.

Su, Au, Wi, Sp Qtrs. 3 1-hr lec. Not open to students with credit for 101 or 200.

**101 Computer-Assisted Problem Solving U 4**

Problem solving techniques using productivity software; spreadsheets, formulas, conditional logic; relational databases, relational algebra; word processing; data presentation; graphics.

Su, Au, Wi, Sp Qtrs. 3 1-hr lec, 1 2-hr lab. Prereq: Mathematics placement level R or higher; or Math 075 or higher. Not open to students with credit for 100 or 200. GEC course.

**102 Introduction to the Internet and the World-Wide Web U 3**

Course of general interest giving experience with accessing and providing information on the World-Wide Web; neither teaches nor requires computer programming.

Su Qtr. 3 cl. Prereq: 100 or 101 or 200 or equiv. Not open to students majoring in Cptr/Inf. Uses Netscape.

**200 Computer Assisted Problem Solving for Business U 5**

Problem solving emphasizing spreadsheets and conditional logic; using productivity software; relational databases, word processing, data presentation, object linking and embedding, and communication systems.

Su, Au, Wi, Sp Qtrs. 4 1-hr lec, 1 2-hr lab. Prereq: Math 116, 130, or 148. Not open to students with credit for 100 or 101.

**201 Elementary Computer Programming U 4**

Introduction to computer programming and to problem solving techniques using computer programs; programming lab experience.

Su, Au, Wi, Sp Qtrs. 3 1-hr lec, 1 2-hr lab. Prereq: Mathematics placement level R or higher; or Math 075 or higher. Not open to students with credit for 221, 202, or En Graph 167. Java is taught.

**202 Introduction to Programming and Algorithms for Engineers and Scientists U 4**

Introduction to computer programming and to problem solving techniques using computer programs with applications in engineering and the physical sciences; algorithm development; programming lab experience.

Su, Au, Wi, Sp Qtrs. 3 1-hr lec, 1 2-hr lab. Prereq: Math 151. Not open to students with credit for 201, 221, or En Graph 167. C++ is taught.

**211<sup>A</sup> Computer Programming for Problem Solving U 5**

Introduction to the use of computers for problem solving; programming and spreadsheet assignments emphasize management-oriented problems. PASCAL and a spreadsheet program are taught.

Su, Au, Wi, Sp Qtrs. 4 cl, 3 hrs lab. Prereq: Math 116 or 130 or 148. Not open to students with credit for 201, 221, En Graph 167, or 200.

E—Designates an enriched version intended for BUS information system majors. Prereq: Math 116, 130, or 148.

**214 Data Structures for Information Systems U 4**

Subroutines and modular programming; searching; basic data structures; recursion; introduction to sequential files.

Su, Au, Wi, Sp Qtrs. 3 cl, 1-3 hrs lab. Prereq: 201. Java is used.

**215 Introduction to Object-Oriented Programming U 4**

Introduction to object-oriented programming; encapsulation using classes, inheritance, etc.; basic data structures.

Su, Au, Wi, Sp Qtrs. 3 1-hr lec, 1 2-hr lab. Prereq: 202 or equiv. Not open to Cptr/Inf majors. C++ is taught.

**221 Software Development Using Components U 4**

Component-based software from client programmer's perspective; intellectual foundations of software engineering; mathematical modeling; specification of object-oriented components; layering; testing and debugging layered operations.

Su, Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lab. (H221: Wi Qtr.) H221 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Math 151; Cptr/Inf 202 or 201 or En Graph 167 or Cptr/Inf Placement Level A (H221: Math H151 or equiv; Cptr/Inf 202 or 201 or En Graph 167 or Cptr/Inf Placement Level A; enrollment in honors program). C++ is taught.

**222 Development of Software Components U 4**

Component-based software from implementer's perspective; container and graphical user interface components; data representation using layering and using pointers; introduction to algorithm analysis.

Su, Au, Wi, Sp Qtrs. 3 1-hr lec, 1 1-hr lab. (H222: Sp Qtr.) H222 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 221 (H222: H221). Not open to students with credit for 222.01 or 222.02. C++ is used.

**230 Introduction to C++ Programming U 4**

Introduction to programming in C++ and object-oriented programming; encapsulation using classes, inheritance, etc.

Su, Au, Wi, Sp Qtrs. 3 cl, 3 hr lab. Prereq: 201, 202, or En Graph 167 or equiv. Not open to Cptr/Inf majors.

**294 Group Studies U 1-5**

This course is designed to give the student an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

**314 Business Programming with File Processing U 4**

Business data processing principles and programming; sequential file processing algorithms, sorting, data validation. COBOL is taught.

Au, Wi, Sp Qtrs. 3 cl, 1-3 hr lab. Prereq: 214 and a minimum CPHR of 2.0.

**321 Design and Analysis of Component-Based Software U 4**

Binary tree components and binary search trees; context-free grammars; regular expressions; parsing and tokenizing components; formal expression components; sorting components and sorting algorithms.

Su, Au, Wi, Sp Qtrs. 3 1-hr lec, 1 1-hr lab. Prereq: 222 and a minimum CPHR of 2.00. Prereq or concur: Math 366. C++ is used.

**360 Introduction to Computer Systems U 4**

Introduction to computer architecture at the machine language and assembler language level; assembler language programming and lab.

Su, Au, Wi, Sp Qtrs. 3 cl, 1-3 hr lab. Prereq: 214 or 222 and a minimum CPHR of 2.00.

**459 Programming Languages for Programmers**

Elementary language constructs of various programming languages for students who are well versed in programming.

This course is intended for experienced programmers who wish to learn an additional language.

**459.01<sup>A</sup> Programming in FORTRAN U 1**

Wi Qtr. Prereq: 314 or 321. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

**459.11 The UNIX Programming Environment U 1**

Introduction to the UNIX programming environment including: shell programming (csh); regular expressions; makefiles; grep, sed, and awk programming languages.

Su, Wi Qtrs. 1 cl. Prereq: 222.

**459.21 Programming in C U 1**

Su, Au, Wi, Sp Qtrs. Prereq: 314 or 321. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

**459.22 Programming in C++ U 1**

Au, Wi, Sp Qtrs. Prereq: 321; and 459.21 or equiv. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

**459.23 Programming in JAVA U 1**

Elementary language constructs of JAVA for students who are well versed in programming.

Au, Wi, Sp Qtrs. 1 cl. Prereq: 321. This course is graded S/U.

**459.31 Programming in LISP U 1**

Sp Qtr. Prereq: 314 or 321. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

**459.41 Programming in COBOL U 1**

Au Qtr. Prereq: 321. Not open to students with credit for 314. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

**489 Professional Practice in Industry U 2**

Preparation and submission of a comprehensive report based on actual employment experience in a co-op job in industry.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to co-op program in Cptr/Inf. Repeatable to a maximum of 8 cr hrs. Cr hrs to be used as free electives only. This course is graded S/U.

**493 Individual Studies U 1-5**

Planning, conducting, and reporting a special study appropriate to the needs of the student.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**516 Information Systems Analysis and Design U G 4**

Introduction to information systems development; tools of structured analysis; data flow diagrams, data dictionary, process descriptions; students develop user specifications in a term project.

Su, Au, Wi, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: 570.

**541 Elementary Numerical Methods U G 3**

Survey of basic numerical methods; number systems and errors of finite representation, solution of a single non-linear equation, interpolation, numerical integration, and solution of linear systems.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 201 or 221 or En Graph 167 or 200, and Math 153.

**548<sup>A</sup> Computer Science for High School Teachers U G 5**

Introduction to computer history, organization, hardware, and software; laboratory experience using batch processing and time-sharing; applications of computers with emphasis on uses in education and business.

Sp Qtr. 4 cl. Prereq: Permission of instructor. Open only to high school teachers. Primarily intended for science, math, or business teachers.

**560 Systems Software Design, Development, and Documentation U G 5**

Software engineering as applied to various classical computer systems programs; assemblers, macroprocessors, loaders; major group project involving the design and implementation of systems software; communication skills emphasized.

Su, Au, Wi, Sp Qtrs. 4 cl, 1 3-hr lab. Prereq: 314 or 321 and 360 or Elec Eng 265, and a second writing course.

**570 File Design and Analysis U G 3**

Random file processing; file organization and access methods; time and space considerations. Introduction to relational database systems.

Au, Wi Qtrs. 3 cl. Prereq: 314 or 321, and Math 366.

**601 Social and Ethical Issues in Computing U G 1**

Social, ethical, and legal issues facing computing professionals; ethical principles; discussion of case studies.

Wi, Sp Qtrs. 1 1.5-hr cl. Prereq: 560.

**612 Introduction to Cognitive Science U G 3**

Cognitive science is an interdisciplinary study of the nature of human thought psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.

Wi Qtr. 2 1.5-hr cl. Prereq: Permission of instructor and a total of 12 or hrs from at least two of the following areas: computer science, linguistics, philosophy, and psychology. Not open to students with credit for Linguist 612, Philos 612, Psych 612, 794 (Sp 89) or 794A (Wi 90). Cross-listed in Linguistics, Philosophy, and Psychology.

**615<sup>A</sup> Arithmetic Algorithms U G 3**

Design, implementation, analysis, and application of computer algorithms for performing the arithmetic operations used in computer algebra systems; integer arithmetic, rational number arithmetic, and modular arithmetic.

Sp Qtr. 3 cl. Prereq: 680 or equiv and either Math 568 or 573 or equiv; or permission of instructor.

**621 Introduction to High-Performance Computing U G 3**

High-performance computer architecture, scientific/engineering computation, development of parallel programs, parallelization overheads, performance evaluation.

Au Qtr. 3 cl. Prereq: 541; Math 568 or Math 571 or Math 601. Course is well suited to grad students from science/engineering in addition to Cptr/Inf students.

**625 Introduction to Automata and Formal Languages U G 3**

Machine based and formal grammar based models of computation: finite automata; regular languages, context free languages, pushdown automata, and Turing machines; Church-Turing thesis; introduction to the halting problem.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 321 and Math 366.

**630 Survey of Artificial Intelligence I: Basic Techniques U G 3**

A survey of the basic concepts and techniques, problem solving, and knowledge representation, including an introduction to expert systems.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 222 and Math 366 and sr/grad standing.

**640<sup>A</sup> Numerical Analysis U G 3**

Analysis of numerical methods for ordinary differential equations, boundary value, and characteristic value problems, splines, non-linear equations, approximation of functions; standard mathematical software libraries.

Wi Qtr. 3 cl. Prereq: 221 or equiv; Math 255 or 415; and 541 or grad standing.

**642<sup>A</sup> Numerical Linear Algebra U G 3**

Iterative methods for the solution of linear systems, computation of eigenvalues and eigenvectors, linear programming-simplex method, use of standard mathematical software libraries.

Au Qtr. 3 cl. Prereq: 541; Math 568 or 571.

**650<sup>A</sup> Information Storage and Retrieval U G 3**

Fundamental concepts of information storage and retrieval with emphasis on problems associated with textual databases; data representation and manipulation; content analysis and description; query languages and heuristics.

Au Qtr. 3 cl. Prereq: 570; and Stat 427 or equiv. Not open to students with credit for 750.

**655 Introduction to the Principles of Programming Languages U G 4**

Programming language concepts such as grammars and parse trees; interpretation versus compilation, binding, and scope rules; and language constructs for control and data abstraction.

Au, Wi, Sp Qtrs. 3 cl, 1-3 lab hr. Prereq: 560 and 625.

**660 Introduction to Operating Systems U G 3**

Operating system concepts: memory management, process management, and file management; sample operating systems.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 560; 570; 675 or Elec Eng 562; Stat 427.

**662 Operating Systems Laboratory U G 3**

Construction of operating system components: scheduling, context switching, progress management, message passing, memory management, interrupt processing.

Au, Wi Qtrs. 2 cl, 1 3-hr lab. Prereq: 459.21 and 660. Lab assignments are programmed in C. Not open to students with credit for 761.

**670 Introduction to Database Systems I U G 3**

Database systems use; query languages-SQL and relational algebra; logical database design; entity-relationship model, database normalization; introduction to transaction processing; database design project.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 314 or 321 and Math 366 or grad standing.

**671 Introduction to Database Systems II U G 3**

Object-oriented and extended relational database systems; data warehousing; active databases; GUI interface to a relational database system; introduction to data and file storage.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 670.

**673<sup>A</sup> Database and Information Management for Manufacturing U G 3**

File and data management, information flow in manufacturing, handling of geometric data for CAD/CAM/CAE, and communication between different computer systems.

Sp Qtr. Prereq: 221 or permission of instructor. Not open to Cptr/Inf majors. Open to students in Manufacturing Systems and Engineering Program.

**675 Introduction to Computer Architecture**

Computer system components, instruction set design, hardwired control units, arithmetic algorithms/circuits, floating-point operations, introduction to memory and I/O interfaces.

**675.01 Introduction to Computer Architecture U G 3**

Wi, Sp Qtrs. 3 cl. Prereq: 360 or Elec Eng 265; Math 366; Elec Eng 261. Not open to students with credit for 675 or 675.02. Intended for students with previous knowledge of Digital Logic Design.

**675.02 Introduction to Computer Architecture U G 4**

Au, Wi, Sp Qtrs. 4 cl. Prereq: 360 or Elec Eng 265; Math 366. Not open to students with credit for 675 or 675.01. Intended for students without previous knowledge of Digital Logic Design.

**676 Microcomputer Systems U G 3**

Bus structure; memory, interrupt, and I/O design; case studies on microprocessors and systems with emphasis on selection, evaluation, and applications based on their architectural features.

Wi, Sp Qtrs. 3 cl. Prereq: 675 or Elec Eng 562.

**677 Introduction to Computer Networking U G 3**

Data communications, network architectures, communication protocols, data link control, medium access control; introduction to local area networks, metropolitan area networks, and wide area networks; introduction to Internet and TCP/IP.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Physics 112 or 132; 360 or Elec Eng 265; 459.21. Lab assignments are programmed in C.

**678 Internetworking U G 3**

High-speed local area networks, metropolitan area networks, bridges, routers, gateways, TCP/IP, application services, network management.

Wi Qtr. 3 cl. Prereq: 660 and 677.

**679 Introduction to Multimedia Networking U G 3**

Introduction to multimedia data types, multimedia compression technologies World-Wide-Web architectures, proxies, streaming video technologies, and network adaptation to multimedia.

Au Qtr. 3 cl. Prereq: 677.

**680 Data Structures U G 3**

Data abstraction; introduction to algorithm analysis; data structures and file structures, including lists, trees, and graphs; searching and sorting.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 560 and 570; Stat 427 or equiv; and Math 366; or grad standing.

**681 Introduction to Computer Graphics U G 4**

Introduction to display hardware and applications, interactive techniques, 2D scan conversion, 2D and 3D transformations, clipping, 3D viewing, introduction to visible surface algorithms and illumination models.

Au, Wi, Sp Qtrs. 3 cl, 1-3 hr lab. Prereq: 560 or permission of instructor; Math 568 or 571.

**693 Individual Studies U G 1-5**

Designed to give the student an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Designed to give the student an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

**721 Introduction to Parallel Computing U G 4**

Principles and practice of parallel computing; design, implementation, and evaluation of parallel programs for shared-memory architectures, local-memory architectures, and vector processors.

Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 621. 621 previously taught as 694E.

**725 Computability and Unsolvability U G 3**

Time and space measures; Turing machine variants and RAM's; universal Turing machines; undecidable language problems; development of efficient algorithms.

Wi, Sp Qtrs. 3 cl. Prereq: 625.

**727\* Computational Complexity U G 3**

Time and space complexity classes and hierarchies; deterministic and nondeterministic log space; polynomial time; polynomial space; complete and provably hard problems; random polynomial time.

Au Qtr. 3 cl. Prereq: 725 and 780.

**730 Survey of Artificial Intelligence II: Advanced Topics U G 3**

A survey of advanced concepts, techniques, and applications of artificial intelligence, including knowledge-based systems, learning, natural language understanding, and vision.

Au Qtr. 3 cl. Prereq: 630.

**731 Knowledge-Based Systems U G 4**

Theory and practice of expert systems and knowledge-based systems; use of current knowledge-based systems software tools.

Sp Qtr. 3 cl and 1 3-hr lab. Prereq: 560 and 630, or grad standing.

**732\* Computational Linguistics U G 3**

Exploration of the computational processing of natural language; syntactic, semantic, and pragmatic processing techniques are applied to understanding and generating written English.

Au Qtr. 3 cl. Prereq: 730; Linguistics 601 or permission of instructor.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Sp Qtr. 1 2-hr cl. Prereq: CIS 612, Linguistics 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Industrial Systems Engineering, Linguistics, Philosophy, Psychology, and Speech and Hearing Science.

**739 Knowledge-Based Systems in Engineering U G 3**

Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation.

Sp Qtr. 2 1.5-hr cl. Prereq: 630 or permission of instructor. Cross-listed in Chemical Engineering and Nuclear Engineering.

**741 Comparative Operating Systems U G 3**

A careful examination of a number of representative computer operating systems.

Su Qtr. 3 cl. Prereq: 660 or equiv.

**752 Techniques for Simulation of Information Systems U G 3**

Introduction to the methodology and techniques of the design of computer simulation of information systems.

Au Qtr. 3 cl. Prereq: Stat 428 or equiv.

**755 Programming Languages U G 3**

Procedural abstraction, data abstraction, control abstraction (nondeterminism, concurrency, etc.), operational semantics, denotational semantics, specification, and verification of programs.

Wi, Sp Qtrs. 3 cl. Prereq: 655 and Math 366.

**758 Compiler Design and Implementation U G 4**

Syntactic and semantic analysis using formal models, automatic programming, generation of optimal code, synthesis of messages, design of incremental programming environments; students write a simple translator.

Au Qtr. 3 cl, 1 lab. Prereq: 459.21, 625, 655, and 680. Lab assignments are programmed in C.

**757 Software Engineering U G 3**

Principles of design, implementation, validation, and management of computer software; emphasis on reading and discussing papers from relevant journals and proceedings; term project required.

Au, Wi Qtrs. 3 cl. Prereq: 560 or equiv and sr or grad standing or permission of instructor.

**758 Software Engineering Project U G 4**

Principles and applications of programming team organization, cost estimation, scheduling, requirements analysis, design, documentation, programming-in-the-large, group reviews, testing, and debugging.

Au, Sp Qtrs. 3 cl, 3 lab hrs. Prereq: 757.

**760 Operating Systems U G 3**

Advanced operating system concepts: process synchronization, process deadlock, security and access control, distributed operating system principles and prototypes.

Au, Wi Qtrs. 3 cl. Prereq: 660 or equiv.

**762 Advanced Operating System Laboratory U G 3**

Construction of advanced operating system components: internet, client-server, remote file server, distributed namespace, user interface software. Sp Qtr. 2 cl, 3 1-3 hr lab. Prereq: 662. Lab assignments are programmed in C.

**763 Introduction to Distributed Computing U G 3**

Concepts and mechanisms in design of distributed systems; process synchronization, global state; reliability; distributed resource management; deadlock, performance evaluation; representative distributed operating systems.

Sp Qtr. 3 cl. Prereq: 760.

**765\* Management Information Systems U G 3**

Theory and practice of management information systems from the viewpoint of computer and information science; systems approach to management and organization; significance of information.

Wi Qtr. 3 cl. Prereq: Grad standing in Cptr/Inf or permission of instructor.

**770 Database System Implementation U G 3**

Fundamental design considerations, system principles and machine organizations of database systems; performance analysis of design alternatives, system configurations and hardware organizations; query and transaction processing.

Wi Qtr. 3 cl. Prereq: 660, 670, 671 or grad standing in CIS.

**772 Information System Project U G 4**

Information system design and development principles: requirement analysis, database design methods and tools, process design, application development tools, testing, evaluation and documentation. Group term project.

Wi Qtr. 3 cl, 3-hr lab. Prereq: 516 or 757, 560 and 670.

**775 Computer Architecture U G 3**

Microprogramming, bit-slice logic, reduced instruction set computer architecture, advanced memory organizations, introduction to parallel computer architectures, and performance models/evaluation.

Au, Sp Qtrs. 3 cl. Prereq: 660; 675 or Elec Eng 562.

**776 Hardware/Software Interface Design Project U G 4**

Principles and application of hardware and software design: design, programming, testing, and evaluation of an autonomous mobile robot system.

Sp Qtr. 2 cl, 2 1-hr lab. Prereq: 459.21, 660, Elec Eng 567 or 329, or permission of instructor.

**777 Telecommunication Networks U G 3**

Broadband integrated services digital networks, asynchronous transfer mode, gigabit networks, wireless networks, multimedia networks, all-optical networks, synchronous optical network.

Sp Qtr. 3 cl. Prereq: 677.

**778 Computer-Aided Design and Analysis of VLSI Circuits U G 4**

VLSI design methodology; specification of VLSI circuits at various levels of abstraction; design, layout, and computer simulation of circuits; high-level synthesis; design projects.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 560, Elec Eng 561; and 675 or Elec Eng 562.

**779 Introduction to Artificial Neural Network Methods U G 3**

Survey of fundamental methods and techniques of artificial neural networks: single and multi-layer networks; associative memory and statistical networks; supervised and unsupervised learning.

Wi Qtr. 3 cl. Prereq: 730 or Elec Eng 762 or permission of instructor. Not open to students with credit for Elec Eng 779. Cross-listed in Electrical Engineering.

**780 Analysis of Algorithms U G 3**

Algorithm design paradigms; mathematical analysis of algorithms; NP-completeness.

Au, Wi Qtrs. 3 cl. Prereq: 680 or grad standing and equiv of 680.

**781 Introduction to 3D Image Generation U G 4**

3D viewing algorithms, advanced illumination models, smooth shading, shadows, transparency, ray tracing, and color models.

Au, Sp Qtrs. 3 cl, 1-3 hr lab. Prereq: 459.21, 675; 681 or permission of instructor; Math 568 or 571. Lab assignments are programmed in C.

**782 Advanced 3D Image Generation U G 3**

Advanced topics in rendering 3D realistic imagery including texture mapping, sampling theory, advanced ray tracing, radiosity, 3D rendering hardware, introduction to surfaces, animation, and volume graphics.

Wi Qtr. 3 cl. Prereq: 781. Lab assignments are programmed in C.

**H783 Honors Research U 1-5**

Supervised research and project work arranged individually for honors students.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Honors standing; permission of instructor. Limitations on number of credit hours applicable toward degree are governed by departmental rules. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**788 Intermediate Studies in Computer and Information Science**

Intermediate work in one of the specialized areas of computer and information science is offered.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor.

**788.01 Computational Complexity U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.02 Information Systems and Database Systems U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.03 Symbolic Computation U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.04 Artificial Intelligence U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.06 Operating Systems and Systems Programming U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.07 Programming Languages U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.08 Computer Organization U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.09 Numerical Analysis U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.10 Human-Computer Interaction U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.11 Parallel and Distributed Computing U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.12 Software Engineering U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**788.14 Computer Graphics U G 1-5**

Repeatable to a maximum of 30 cr hrs.

**793 Individual Studies U G 1-5**

Designed to give the individual student an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 24 cr hrs. Repeatable to a maximum of 12 cr hrs for undergraduate and 24 cr hrs for grad students. This course is graded S/U.

**794 Group Studies U G 1-5**

Designed to give students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**797 Interdepartmental Seminar U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Repeatable by permission.

**875 Advanced Computer Architecture G 3**

Advanced pipelining techniques, vector supercomputers, shared-memory and distributed-memory multiprocessors, massively parallel systems, multithreaded machines.

Sp Qtr. 3 cl. Prereq: 721.

**881 Geometric Modeling G 3**

Common mathematical techniques for modeling objects in computer graphics applications. Representational schemes, common geometric operators, properties of solid models, solid model construction and data structures.

Sp Qtr. 3 cl. Prereq: 781, 541; or grad standing and permission of instructor. Lab assignments are programmed in C.

**885 Seminar on Research Topics in Computer and Information Science G 1**

Lectures on current research by faculty members in the department.

Au Qtr. 2 cl. Prereq: 1st yr grad student in Cptr/Inf. This course is graded S/U.

**888 Advanced Studies in Computer and Information Science**

Advanced work in one of the specialized areas of computer and information science.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor.

**888.01 Computational Complexity G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**888.02 Information Systems and Database Systems G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**888.03 Symbolic Computation G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**888.04 Artificial Intelligence G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**888.06 Operating Systems and Systems Programming G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**888.08 Computer Organization G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**888.09 Numerical Analysis G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**888.11 Parallel and Distributed Computing G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**888.12 Software Engineering G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**888.14 Computer Graphics G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**889 Advanced Seminar in Computer and Information Science G 1-2**

Selected topics of particular current interest in both the research and applications of computer and information science are considered.

Wi, Sp Qtrs. 1 2-hr cl. Prereq: 2nd qtr grad standing in Cptr/Inf or permission of instructor. This course is graded S/U.

**899 Interdepartmental Seminar G 1-5****999 Research G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Czech

232 Cunz Hall, 1841 Millikin Road, 292-6733

See also Slavic Languages and Literatures.

**101 Elementary Czech I**

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Au Qtr.

**101.51 Individualized Track U 1-5**

Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**102 Elementary Czech II**

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Wi Qtr. Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor.

**102.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 101 or 101.01, or 5 cr hrs of 101.51, or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Repeatable to a maximum of 5 cr hrs. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

**103 Intermediate Czech I****103.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 102 or 102.01, or 5 cr hrs of 102.51, or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor. GEC for lang course.

**104 Intermediate Czech II****104.51 Individualized Track U 1-5**

Continuation of 103; development of the four skills.

Prereq: 5 cr hrs of 103.51 or permission of instructor. Not open to students with credit for 111 or to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1-5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor. GEC for lang course.



**111 Intensive Intermediate Czech U 10**

Readings, oral and written practice, grammar review.

Sp Qtr. Prereq: 102.01 or 5 cr hrs of 102.51 or equiv. Equiv to the 3rd and 4th courses of the foreign language sequence. GEC for lang course.

**405 Advanced Czech I****405.51 Individualized Track U 1-5**

Continuation of 104.51; development of the four skills.

Prereq: 5 cr hrs of 104.51 or 111 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 104.51 and 405.51 concurrently with permission of instructor.

**407 Advanced Czech II****407.51 Individualized Track U 1-5**

Prereq: 5 cr hrs of 405.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

**Dance**

030A Sullivant Hall, 1813 North High Street, 292-7977

**111 Techniques and Materials of Dance I****111.01 Improvisation U 1-6**

Wi Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**111.02 Dance Fundamentals U 1-6**

Sp Qtr. Arr. Prereq: 111.01 or qualifying audition or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**111.03 Introduction to Dance Composition U 1-6**

Sp Qtr. Arr. Prereq: 111.06 or qualifying audition or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**111.04 Modern Dance Technique, Part 1 U 1-6**

Au Qtr. Arr. Prereq: Qualifying audition. Repeatable to a maximum of 6 cr hrs.

**111.05 Ballet Technique, Part 1 U 1-6**

Au Qtr. Arr. Prereq: Qualifying audition.

Repeatable to a maximum of 6 cr hrs.

**111.06 Modern Dance Technique, Part 2 U 1-6**

Wi Qtr. Arr. Prereq: 111.06 or qualifying audition. Repeatable to a maximum of 6 cr hrs.

**111.07 Ballet Technique, Part 2 U 1-6**

Wi Qtr. Arr. Prereq: 111.05 or qualifying audition. Repeatable to a maximum of 6 cr hrs.

**111.08 Modern Dance Technique, Part 3 U 1-6**

Sp Qtr. Arr. Prereq: 111.06 or qualifying audition. Repeatable to a maximum of 6 cr hrs.

**111.09 Ballet Technique, Part 3 U 1-6**

Sp Qtr. Arr. Prereq: 111.07 or qualifying audition. Repeatable to a maximum of 6 cr hrs.

**111.10 Music Skills U 2**

Au Qtr. Prereq: qualifying audition. Repeatable to a maximum of 6 cr hrs.

**161 Dance and Theatre, 1945 to the Present U 5**

Survey of contemporary practices in western dance and theatre from 1945 to the present, with emphasis on major stylistic trends, multicultural influences, and principal artists and their works.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl, 1 1-hr rec cl. Not open to students with credit for Arts Col 161 or Theatre 161. Cross-listed in Theatre. GEC arts and hums VPA course. VPA Admis Cond course.

**190 Ethnic Dance Forms**

Folk forms as practiced by ethnic groups in selected cultures.

Au Qtr. Prereq: Qualifying audition or permission of instructor.

**190.01 Dance Forms of the African Diaspora U 1-5**

Repeatable to a maximum of 5 cr hrs.

**190.02^ International Dance Survey U 1-5**

Repeatable to a maximum of 5 cr hrs.

**190.03^ Other U 1-5**

Repeatable to a maximum of 5 cr hrs.

**198 Dance Production U 1-5**

Production activities.

Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

**200 History of Ballet and Modern Dance U 5**

The development of dance as a performing art from the Renaissance to the present.

Wi, Sp Qtrs. 3 1.5-hr cl. GEC arts and hums VPA course. VPA Admis Cond course.

**201 Introduction to Dance I**

An introductory course in dance.

Su, Au, Wi, Sp Qtrs. Arr. VPA Admis Cond course.

**201.01 Modern Technique U 1-5**

Repeatable to a maximum of 12 cr hrs.

**201.02 Ballet Technique U 1-5**

Repeatable to a maximum of 12 cr hrs.

**201.03 Jazz U 1-5**

Repeatable to a maximum of 12 cr hrs.

**201.04 Other U 1-5**

Repeatable to a maximum of 12 cr hrs.

**201.05 Tap Technique U 1-5****202 Introduction to Dance II**

Continuation of 201.

Au, Wi, Sp Qtrs.

**202.01 Modern Technique U 1-5**

Prereq: 201.01 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**202.02 Ballet Technique U 1-5**

Prereq: 201.02 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**202.03 Jazz U 1-5**

Prereq: 201.03 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**203 Introduction to Dance III**

Continuation of 201 and 202.

Au, Wi, Sp Qtrs.

**203.01 Modern Technique U 1-5**

Prereq: 202.01 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**203.02 Ballet Technique U 1-5**

Prereq: 202.02 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**203.03 Jazz U 1-5**

Prereq: 202.03 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**214 Dance Techniques II**

Technique: modern dance and ballet, level II.

Open only to dance majors.

**214.04 Modern, Part 1 U 1-6**

Au Qtr. Arr. Prereq: Juried examination with the completion of 111.08 or qualifying audition. Repeatable to a maximum of 9 cr hrs.

**214.05 Ballet, Part 1 U 1-6**

Au Qtr. Arr. Prereq: Juried examination with the completion of 111.01 or qualifying audition. Repeatable to a maximum of 9 cr hrs.

**214.06 Modern, Part 2 U 1-6**

Wi Qtr. Arr. Prereq: 214.04 or qualifying audition. Repeatable to a maximum of 9 cr hrs.

**214.07 Ballet, Part 2 U 1-6**

Wi Qtr. Arr. Prereq: 214.05 or qualifying audition. Repeatable to a maximum of 9 cr hrs.

**214.08 Modern, Part 3 U 1-6**

Sp Qtr. Arr. Prereq: 214.06 or qualifying audition. Repeatable to a maximum of 9 cr hrs.

**214.09 Ballet, Part 3 U 1-6**

Sp Qtr. Arr. Prereq: 214.07 or qualifying audition. Repeatable to a maximum of 9 cr hrs.

**257 Modern Dance Overview U 3**

An introduction to the history and aesthetic principles of modern dance from the turn of the 20th century to present.

Wi Qtr. 2 1.5-hr cl. Prereq: Admission to dance major program.

**289 Field Experience in Dance**

Foundations in dance education.

Prereq: Qualifying audition or permission of instructor.

**289.01 Introduction to Dance Education U 1-5**

Survey of dance in public education: theoretical foundations and field-based experiences.

Sp Qtr. Arr.

**289.02 Dance Education in Diverse Settings U 1-5**

Survey of dance in diverse community settings: theoretical foundations and field-based experiences.

Wi Qtr. Arr.

**289.03 Other: Field Experience in Dance U 1-5**

Directed field experience emphasizing appropriate teaching strategies for different educational and community settings.

Su, Au, Wi, Sp Qtrs. Arr. for each cr hr 2 hrs/week in field placement. Repeatable to a maximum of 10 cr hrs.

**293 Individual Studies U 1-5**

Individual studies of specified problems in the field of dance.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Prereq: Permission of chairperson. Repeatable to a maximum of 15 cr hrs.

**299 Dance Performance**

Su, Au, Wi, Sp Qtrs. 2 or more hrs rehearsal wkly. Open only to dance majors; others by special permission.

**299.04 Student Choreographic Projects U 1-5**

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**299.06 Workshops U 1-5**

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**534 Dance Techniques III**

Technique: modern dance and ballet, level III.

Open only to dance majors.

**534.04 Modern, Part 1 U G 1-6**

Au Qtr. Arr. Prereq: Juried examination with the completion of 214.08 or qualifying audition. Repeatable to a maximum of 12 cr hrs.

**534.05 Ballet, Part 1 U G 1-6**

Au Qtr. Arr. Prereq: Juried examination with the completion of 214.09 or qualifying audition. Repeatable to a maximum of 12 cr hrs.

**534.06 Modern, Part 2 U G 1-6**

Wi Qtr. Arr. Prereq: 534.04 or qualifying audition. Repeatable to a maximum of 12 cr hrs.

**534.07 Ballet, Part 2 U G 1-6**

Wi Qtr. Arr. Prereq: 534.05 or qualifying audition. Repeatable to a maximum of 12 cr hrs.

**534.08 Modern, Part 3 U G 1-6**

Sp Qtr. Arr. Prereq: 534.06 or qualifying audition. Repeatable to a maximum of 12 cr hrs.

**534.09 Ballet, Part 3 U G 1-6**

Sp Qtr. Arr. Prereq: 534.07 or qualifying audition. Repeatable to a maximum of 12 cr hrs.

**601 Supplemental Studies in Dance**

Foundations in dance.

Su, Au, Wi, Sp Qtrs. 2 or more lab hrs. Prereq: Permission of instructor.

**601.01 Modern Technique U G 1-5**

Repeatable to a maximum of 12 cr hrs.

**601.02 Ballet Technique U G 1-5**

Repeatable to a maximum of 12 cr hrs.

**601.04 Tap Dance U G 1-5**

Repeatable to a maximum of 12 cr hrs.

**601.05 Historical Dance U G 1-5**

Repeatable to a maximum of 12 cr hrs.

**601.06 Jazz Dance U G 1-5**

Repeatable to a maximum of 12 cr hrs.

**601.07 Alexander Technique U G 1-5**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**601.08 Other U G 1-5**

Repeatable to a maximum of 12 cr hrs.

**601.09 Mexican Dance U G 1-5**

Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**605 Dance Dynamics U G 3**

Study of the dancer's dynamic energy.

Wi Qtr. 2 1.5-hr cl. Prereq: 645 or jr standing, or 845 and grad standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**606 Space Design U G 3**

The study of spatial forms in dance.

Sp Qtr. 2 1.5-hr cl. Prereq: 620 and jr standing, or 820 and grad standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**607 Intermediate Effort U G 3**

Intermediate study of the dancer's dynamic energy; continuation of 605.

Sp Qtr. 2 1.5-hr cl. Prereq: 605 or permission of instructor. Not open to students with credit for 635. Repeatable to a maximum of 6 cr hrs.

**610 Issues in Videodance U G 3**

Investigation of aesthetic and technological components of dance and video as an introduction to studies in videodance production.

Sp Qtr. 1 2-hr cl. Prereq: 161 or 200 or 257 or Art Educ 160 or Arts Col 161 or Theatre 161, and jr standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**615^ Music Resources for Dance U G 2**

Investigation of music skills and their application to teaching and choreography.

Sp Qtr. Arr. 1 2-hr cl. Prereq: 111.10, grad standing, or permission of instructor. Repeatable to a maximum of 4 cr hrs.

**620 Dance Notation I U G 3**

Basic principles of Labanotation; work in theory, readings, and writing using motif descriptions.

Au Qtr. Arr. Prereq: 1 yr as dance major or permission of instructor.

**621 Dance Notation II U G 3**

Continuation of 620; emphasis on Labanotation.

Wi Qtr. Arr. Prereq: 620 or permission of instructor.

**622 Dance Notation III U G 3**

Continuation of 621; emphasis on reading dance.

Sp Qtr. Arr. Prereq: 621 or permission of instructor.

**623 Advanced Notation U G 3**

Advanced Labanotation.

Au, Wi Qtrs. Arr. Prereq: 622 or equiv with written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**624 Directing from Score U 4**

Methods of teaching and coaching a dance learned from a Labanotated score.

Sp Qtr. 3 1.5-hr cl. Prereq: 623. Repeatable to a maximum of 16 cr hrs.

**633 Lighting for Dance U G 1-5**

A study of stage lighting for dance; lectures, readings, and discussions.

Au, Wi, Sp Qtrs. Arr. Prereq: 198 or equiv. Repeatable to a maximum of 15 cr hrs.

**637 Dance Technique IV**

Technique: modern and ballet, level IV.

Open only to dance majors.

**637.04 Modern, Part 1 U G 1-6**

Au Qtr. Arr. Prereq: Juried examination with the completion of 534.08 or qualifying audition. Repeatable to a maximum of 12 cr hrs.

**637.05 Ballet, Part 1 U G 1-6**

Au Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**637.06 Modern, Part 2 U G 1-6**

Wi Qtr. Arr. Prereq: 637.04. Repeatable to a maximum of 12 cr hrs.

**637.07 Ballet, Part 2 U G 1-6**

Wi Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**637.08 Modern, Part 3 U G 1-6**

Sp Qtr. Arr. Prereq: 637.06. Repeatable to a maximum of 12 cr hrs.

**637.09 Ballet, Part 3 U G 1-6**

Sp Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**645 Foundations in Dance Composition I U G 1-5**

Au Qtr. Arr. Prereq: 111.03 or equiv. Open only to dance majors or by permission of instructor. Repeatable to a maximum of 12 cr hrs.

**646 Foundations in Dance Composition II U G 1-5**

Wi Qtr. Arr. Prereq: 645. Open only to dance majors. Repeatable to a maximum of 12 cr hrs.

**648 Music and Choreography U G 5**

Study of music suitable for choreographic purposes and the various approaches to the use of music in dance composition.

Sp Qtr. Arr. Prereq: 646 and Music 140 or 141.

**651 Repertory**

Experience in learning a dance.

Arr. Prereq: 214.08 or permission of instructor. Open only to dance majors.

**651.01 Existing Work U G 1-5**

Su, Sp Qtrs. Repeatable to a maximum of 12 cr hrs.

**651.02 New Work U G 1-5**

Au Qtr. Repeatable to a maximum of 12 cr hrs.

**657 Dance in Diverse Cultures U G 3**

A multicultural investigation of the form and function of dance as a communal activity, functioning as ritual, art, and play.

Sp Qtr. Arr.

**658 Early Ballet History U G 3**

Survey of the history of ballet from the Renaissance to the later part of the 18th century.

Sp Qtr. Arr.

**659 Ballet and Modern Dance History of the 19th and 20th Centuries U G 3**

Survey of dance from the late 18th century to the 1970's.

Wi Qtr. 4 cl.

**670^ Dance Fundamentals II U G 1-4**

An investigation of movement awareness principles and learning techniques (Alexander and Bartenieff in particular) and their practical application to dance material.

Wi Qtr. Arr. Prereq: Jr standing and permission of instructor. Repeatable to a maximum of 4 cr hrs.

**671^ Kinesiology for Dance U G 3**

Exploration of the skeleton and muscles for mechanical efficiency in movement, including principles of stability and motion as they relate to dance.

Sp Qtr. 2 1.5-hr cl, 1 lab. Prereq: Jr standing and EEOB/Zoology 235 recommended.

**686^ Resources for Dance Education U G 2**

Exploration of the use of musical accompaniment and motif writing as resources for teaching creative movement.

Wi Qtr. 2 1.5-hr cl. Prereq: Open to dance majors and other education students by permission of instructor. Repeatable to a maximum of 4 cr hrs.

**687 Dance for Children**

Foundation for teaching dance to children.

**687.01 Fundamentals of Children's Dance U G 5**

Wi Qtr. 3 1.5-hr cl. Prereq: 289.01 and 289.02, or permission of instructor.

**687.02 Children's Dance in Educational Settings U G 3**

Sp Qtr. 3 1.5-hr cl. Prereq: 214.08 and 687.01, or permission of dance ed coordinator.

**688 Methods and Materials of Teaching Modern Dance U G 3-5**

Foundations for teaching; laboratory problems, lectures, readings, and discussions.

Au Qtr. Arr. Prereq: 214.08 or permission of instructor.

**689 Directed Teaching Experience in Dance U G 1-5**

Designed to aid prospective teachers of dance in their development of essential teaching skills in a variety of settings.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**691 Dance Practicum I U G 1-5**

Special applied projects for upper level dance majors.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

**692^ Workshop in Dance U G 1-15**

Concentrated study of dance and related areas; nature of workshop depends upon selected emphasis.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of workshop director. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies in Dance**

Investigation of selected professional problems.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions for undergrad cr and to a maximum of 30 cr hrs in any combination of decimal subdivisions for grad cr.

**693.01 Choreography U G 1-5**

Prereq: 648. Open only to dance majors with written permission of adviser or chairperson. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.02 Laban Studies U G 1-5**

Prereq: Written permission of dance adviser or chairperson. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.03 Research U G 1-5**

Prereq: Written permission of dance adviser or chairperson. Open only to dance majors. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.04 Production U G 1-5**

Prereq: Written permission of dance adviser or chairperson. Open only to dance majors. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.05 Other U G 1-5**

Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Prereq: Permission of chairperson. Repeatable to a maximum of 25 cr hrs.

**699 Dance Performance**

Su, Au, Wi, Sp Qtrs. 2 or more hrs of rehearsal wkly. Prereq: Permission of chairperson. Open only to dance majors; others by permission of chairperson.

**699.04 Student Choreographic Projects U G 1-5**

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**699.06 Workshops U G 1-5**

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**749 Group Forms U G 3**

Composing group dances and exploring compositional devices and craft unique to group choreography.

Au Qtr. 3 1.5-hr cl. Prereq: 847 for grad students and 648 for undergraduate students; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**750 Choreography Workshop U G 1-5**

Choreographing and producing a dance in a performance setting.

Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 13 cr hrs.

**759 Postmodernism in Dance U G 3,5**

An inquiry into aesthetic points of view, beliefs, and assumptions inherent in dance practices and dance criticism from the 1960's to the present.

Sp Qtr. 2 1.5-hr cl. Prereq: 161, 200, 257, or 659; or Arts Col 161; or Theatre 161; or permission of instructor.

**H783 Honors Research U 3-5**

A program of research and/or dance investigation for each student with individual conferences resulting in an honors thesis or honors project.

Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a pt-hr ratio of 3.50 in dance, permission of the instructor under whose supervision the work is to be completed, and the Honors Committee of either the College of the Arts or the College of Education. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**786 Student Teaching in Dance in Elementary Education U G 3-15**

Observation, participation, and teaching in a public school; seminars and individual conferences.

Au, Wi, Sp Qtrs. Arr. Prereq: 689 and permission of dance educ coordinator. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**787 Student Teaching in Dance in Secondary Education U G 3-15**

Observation, participation, and teaching in a public school; seminars and individual conferences.

Au, Wi, Sp Qtrs. Arr. Prereq: 689 and permission of dance ed coordinator. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**788 Student Teaching Seminar U G 1**

Forum for discussing pedagogical issues and concerns encountered during the student teaching residency.

Au, Wi, Sp Qtrs. 1 1.5-hr cl. Prereq: 289.01, 289.02, 687.01, 687.02, 688, and 689. Repeatable to a maximum of 2 cr hrs.

**801 Seminar**

Not open to students with 15 cr hrs in 801.

**801.21 Analysis of Choreographic Style G 2**

Designed to introduce students to the examination of choreographic style.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: 822 or permission of instructor.

**801.22 Seminar in Body-Mind Approaches G 3**

Introduction to body-mind practices as applied to dance; emphasis on Laban Movement Analysis.

Wi Qtr. 3 1.5-hr cl. Repeatable to a maximum of 8 cr hrs. Including cr hrs earned in 803 and 804.

**801.31 Current Issues in Dance and Performance Art G 2**

Discussion of current trends in dance and performance art in the context of contemporary issues in society and the arts.

Au Qtr. 2 1-hr cl. Prereq: 651.01, 659, 699.04 or 699.06, 759, 845, 846, and 847; or equivs. Repeatable to a maximum of 4 cr hrs.

**801.51 Resources Seminar G 2**

Designed to meet the needs of graduate students entering the MA and MFA degree programs in dance.

Au Qtr. 1 cl. Repeatable to a maximum of 4 cr hrs.

**801.61 Teaching Associate Seminar G 1**

Seminar designed specifically to meet the needs of students in the MA and MFA.

Su, Au, Wi, Sp Qtrs. 1 1.5-hr cl. Prereq: Grad standing in dance or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**801.71 Performance Technique G 2**

An interdisciplinary seminar exploring the creative and practical aspects of performance through exercises, readings, and discussion.

Wi Qtr. 2 1.5-hr cl. Prereq: Grad standing in dance, theatre, or vocal performance; or permission of instructor. Repeatable to a maximum of 4 cr hrs.

**802 Choreographic Projects G 1-5**

Advanced choreographic projects.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 25 cr hrs.

**804 Elements of Dance II G 2**

Wi Qtr.

**805^ Advanced Effort G 3**

Continuation of 805 and 835.

Wi Qtr. 2 1.5-hr cl. Prereq: 805 or 835 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**806^ Advanced Space Harmony G 3**

Continuation of 806 and 836.

Wi Qtr. 2 1.5-hr cl. Prereq: 806 or 836 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**807 Foundations of Labanotation G 2**

An examination of the spatial structure and dynamic rhythm of bodily movement in dance through the Laban framework.

Au Qtr. 1 2-hr cl. Prereq: 804.

**820 Labanotation I G 4**

Five-week study of motif writing/description and five-week elementary course in Labanotation.

Au Qtr. 3 1.5-hr cl.

**821 Labanotation II G 4**

Continuation of 820.

Wi Qtr. 3 1.5-hr cl. Prereq: 820 or permission of instructor.

**822 Labanotation III G 4**

Continuation of 821.

Sp Qtr. 3 1.5-hr cl. Prereq: 821 or permission of instructor.

**823 Labanotation IV G 3-5**

Reading, analysis, and writing of complex movement ideas.

Au, Wi Qtrs. 3 1.5-hr cl. Prereq: 822 or equiv. Repeatable to a maximum of 20 cr hrs.

**824 Directing from Score G 1-5**

Teaching and coaching a dance learned from a Labanotated score.

Sp Qtr. Arr. Prereq: One qtr of 823. Repeatable to a maximum of 15 cr hrs.

**845 Issues of Choreography I G 3**

Investigation of the choreographic process; emphasis on the dynamics of movement.

Au Qtr. 2 1.5-hr cl. Prereq: Admission to grad program in dance or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**846 Issues of Choreography II G 4**

Continued investigation of the choreographic process; emphasis on structure.

Wi Qtr. 3 1.5-hr cl. Prereq: 845 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

**847 Issues of Choreography III G 3**

Continued investigation of the choreographic process; emphasis on choreographic invention, structure, and context.

Sp Qtr. 2 1.5-hr cl. Prereq: 846 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**893 Individual Studies in Dance**

Investigation of selected professional problems.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs in any combination of decimal subdivisions.

**893.01 Choreography G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.02 Laban Studies G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.03 Research G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.04 Production G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.05 Other G 1-5**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**894 Group Studies G 1-5**

Advanced problems in dance; individual or group participation.

Repeatable to a maximum of 30 cr hrs.

**970 Master's Project**

Research and practical investigation of selected topics for purposes of the Plan B master's project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Evidence of substantial work in proposed area and grad standing in dance.

**970.01 Choreography and/or Performance G 1-25**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**970.02 Directing and Reconstruction G 1-25**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**970.03 Documentation and Analysis of Field Research G 1-25**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**970.04 Production G 1-25**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**970.05 Other G 1-25**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**999 Research in Dance G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Dental Hygiene

3082 Postle Hall, 305 West 12th Avenue, 292-2228

**201 Oral Anatomy and Tooth Morphology U 4**

Morphology and physiology of human teeth and surrounding structures.

Au Qtr. 2 cl. 1 recitation, 3 lab hrs. Prereq: Dent hyg soph standing.

**223 Dental Hygiene Therapy I**

Wi Qtr. Prereq: 201, 295.

**223.01 Introduction to Periodontology U 3**

Understanding of the periodontium in relation to the etiology of periodontal disease; the formation of deposits on teeth and the recognition, classification, and prevention of periodontal disease.

3 cl.

**223.02 Pre-Clinic Laboratory U 4**

Introduces the dental hygiene student to procedures and techniques necessary to function as a co-therapist in providing initial dental hygiene therapy.

4 3-hr labs.

**224 Dental Hygiene Therapy II**

Sp Qtr. Prereq: Psych 100.

**224.01 Topics in Preventive Care for Dental Hygienists U 2**

Introduction and development of knowledge in appropriate use of preventive materials and techniques to arrest and control oral disease.

2 cl. Prereq: C- or higher in 223.01.

**224.02 Clinic U 2**

Initial clinical experience in patient care. Emphasis on patient assessment and instrumentation.

1 cl, 6 hrs lab/clinic. Prereq: 263, 264, C- or higher in 223.01 and 223.02; Anatomy. Prereq or concur: Physiology.

**225 Dental Hygiene Elective Clinic I U 1**

An elective extension of initial clinical experience in patient care. Emphasizing and reinforcing patient assessment and instrumentation.

Su Qtr. 10 3-hr clinics. Prereq: 224.02. This course is graded S/U.

**233 Oral Histology and Embryology U 2**

A study of the microscopic anatomy of the teeth and surrounding structures; the development of the teeth, oral cavity, and face.

Wi Qtr. 2 cl. Prereq: Dent hyg 1st yr standing and basic biology; and concur: anatomy.

**240 Introduction to General Pathology U 2**

An introduction to the basic principles of pathology and mechanisms of disease; the pathophysiology of common problems involving the various organ systems with emphasis on clinical manifestations.

Sp Qtr. 2 1-hr cl. Prereq: 233 and prereq or concur: Zoology 232.

**250 Restorative Dentistry I U 1**

Introduction to the terminology and concepts of cariology and the use of effective preventive techniques.

Sp Qtr. 1 1-hr cl. Prereq: DH 201.

**263 Oral Radiography U 2**

The theory and technical procedures of oral radiography.

Wi Qtr. 2 cl. Prereq: DH 201 and soph standing.

**264 Oral Radiography Laboratory U 1**

Oral radiography for dental hygienists.

Wi Qtr. 3-hr lab. Prereq: DH 201 and soph standing; Dent 545 concur. Not open to student with credit for 263.

**273 Dental Materials Laboratory U 2**

A study of the composition, chemical and physical properties, manipulation, and uses of various materials employed in the practice of dentistry.

Sp Qtr. 2 3-hr labs. Prereq: Dent hyg 1st yr standing and Chem 102 or Chem 122. Not open to students with credit for 372.

**295 Introduction to Dental Hygiene U 1**

Introduction to the historical, professional, legal, and ethical aspects of dental hygiene.

Au Qtr. 1 cl. Prereq: Dent hyg soph standing.

**301 Pain and Anxiety Control U 2**

Survey of commonly used dental office techniques for managing patient anxiety and pain. Topics include nitrous oxide/oxygen inhalation anesthesia, local anesthesia, and behavioral management of patients.

Wi Qtr. 1 2-hr cl. Prereq: 201, 321.01.

**321 Dental Hygiene Therapy III**

Au Qtr. Prereq: 224.01, 224.02, 240, 250, and 273.

**321.01 Topics in Dental Hygiene Patient Care U 2**

Topics in dental hygiene patient care including dental ethics, nutritional counseling, oral photography, four-handed dentistry, dental emergencies and OSHA regulations. Emphasis on comprehensive treatment of the dental patient.

2 cl.

**321.02 Clinic U 3**

Ongoing clinical experience with emphasis on development of fundamental clinical skills.

1 cl, 9 hrs clinic.

**321.03 Intermediate Topics in Periodontology U 1**

Dental hygiene seminar and application of periodontal therapies and adjunctive procedures for clinical dental hygiene therapy.

Au Qtr. 1 3-hr cl/lab. Prereq: 223.01.

**322 Dental Hygiene Therapy IV**

Wi Qtr. Prereq: 321.01, 321.02, 321.03, 330, 338, 341, 380.

**322.01 Supportive Periodontal Therapy U 1**

Prepares the student to provide long term monitoring and supportive therapy for periodontally compromised patients in dental practice settings.

1 cl.

**322.02 Clinic U 3**

Continuation of clinical development in total patient care. Additional patient treatment modalities are included.

1 cl, 9 hrs clinic.

**323 Dental Hygiene Therapy V**

Sp Qtr. Prereq: 301, 322.01, 322.02.

**323.01 Outcomes of Patient Care U 1**

Case presentation and literature review are used to develop analytical skills to examine outcomes of patient care. Students prepare case analysis for peer and faculty evaluation.

1 cl. Prereq: 383.

**323.02 Clinic U 3**

Ongoing clinical experience with emphasis on application of clinical techniques on a variety of patients.

1 cl, 9 hrs clinic.

**325 Dental Hygiene Elective Clinic II U 1**

An elective extension of the clinical experience in patient care. Emphasizing refining skills taught in previous clinical courses.

Su Qtr. 10 3-hr clinics. Prereq: 323.02. This course is graded S/U.

**330 Care for Patients with Special Needs U 2**

Development of background to facilitate recognition of the special-needs patient and techniques in dental hygiene care for this population.

Sp Qtr. 1 2-hr cl. Prereq: Dent hyg jr standing or permission of instructor.

**331 Pharmacology U 3**

A study of pharmacology including the biochemical basis of drugs used in dentistry which have implications for dental patients and the application of pharmacological agents for specific usage.

Wi Qtr. 3 cl. Prereq: 223.01, 240, and Zoology 232.

**338 Pediatric Dentistry U 2**

Lectures, laboratory, and clinical exercises to prepare students to provide for the pediatric patient.

Au Qtr. 1 cl, 2 lab hrs. Prereq: Jr standing.

**341 Introduction to Oral Diagnosis U 2**

Introduction to the diagnostic process; pathogenesis, and symptomatology and treatment of oral disease.

Au Qtr. 2 cl. Prereq: 240.

**351 Restorative Dentistry II U 5**

Theory and technical procedures in restoration with compound cavity preparations (amalgam alloy/filled resins) and procedures utilized by advanced qualified personnel in basic and advanced restorative dentistry.

Su Qtr. 3 cl, 6 lab hrs. Prereq: Successful completion of 250.

**352 Expanded Functions Clinic I U 2**

Clinical application of expanded function duties permitted by law.

Su Qtr. 6 clinic hrs. Prereq or concur: 351.

**362 Assessment and Management of the Geriatric Patient U 1**

Fosters an understanding of the special considerations needed to provide dental care to geriatric patients; requires extensive knowledge of the total patient situation.

Sp Qtr. 1 cl. Prereq: Dent hyg jr standing.

**373 Dental Materials for Dental Hygienists U 2**

A study of the composition, chemical and physical properties, manipulation, and various materials employed in the practice of dentistry.

Sp Qtr. 1 2-hr cl. Prereq: 273.

**380 Community Dental Health U 2**

Development of the knowledge, attitudes, skills and behaviors necessary to promote dental health and prevent dental disease through organized community efforts.

Au Qtr. 2 cl. Prereq: 295. Not open to students with credit for 381 and 382.

**383 Introduction to Research and Statistical Methods U 5**

Methods utilized in community health research, including study design, sampling, data collection, and the use of statistical tools in the interpretation of quantitative data.

Sp Qtr. 4 1-hr cl, 1 2-hr recitation, or microcomputer lab. Prereq: Dent hyg jr standing. GEC course.

**384 Dental Hygiene Care for the Mentally Retarded and Developmentally Disabled U 1-5**

Various handicapping conditions and any oral manifestations; management techniques and practice in a clinical setting; comprehensive on-going follow-up in the group home setting.

Au, Wi, Sp Qtrs. 1 cl and arr. Prereq: 223, dent hyg 2nd yr standing, and permission of instructor.

**401 Dental Practice Economics, Management and Employment Issues U 3**

Economic and management concepts of dental practice settings; utilization of management skills in high quality dental hygiene care; preparation for employment and career management.

Wi Qtr. 2 1.5-hr cl. Prereq: Dent hyg sr standing. Not open to students with credit for 403 and 413.

**410 Occlusion U 1**

The goal of this course is to prepare dental hygiene students to collect and record all pertinent information related to the patients' occlusion.

Wi Qtr. 10 3-hr lab/clinic sessions. Prereq: Sr standing in Dental Hygiene.

**411 Dental Hygiene Therapy VI**

Au Qtr. Prereq: 323.01, 323.02, 362, 373, Pharmacy 470.

**411.01 Advanced Topics in Periodontology U 2**

A continuation of 321.03; includes the most recent advances in periodontal therapy, case studies and a review of the literature.

2 cl. Prereq: 321.03.

**411.02 Clinic U 3**

Continuation of clinical patient care with emphasis on time management. Patient care parameters are expanded.

1 cl, 9 hrs clinic.

**412 Dental Hygiene Therapy VII**

Prereq: 411.01, 411.02.

**412.01 Analysis and Interpretation of Research in Oral Health Care U 1**

Analysis of current oral health research with emphasis on interpretation of research findings and strength of evidence. Students will analyze strength of the evidence from literature reviews developed in 411.01.

Wi Qtr. 1 cl.

**412.02 Clinic U 3**

A final clinical experience incorporating all previously acquired knowledge, techniques, and procedures.

Au Qtr. 1 cl, 9 hrs clinic.

**420 Oral Radiography and Interpretation U 1**

Interpretation of radiographic normal anatomic structures and pathologic entities; radiation hygiene.

Au Qtr. 1 cl. Prereq: 263 or Dent 545 and dent hyg 264, dent hyg sr standing. Not open to students with credit for 320.

**450 Expanded Functions Clinic II U 2**

A continuation of 352.

Au Qtr. 6 clinic hrs. Prereq: 352.

**451 Expanded Functions Clinic III U 2**

A continuation of 450.

Wi Qtr. 6 clinic hrs. Prereq: 450.

**452 Expanded Functions Seminar U 2**

Seminar on current expanded functions practice management techniques and current law in Ohio including practical experiences in preparation for Ohio Expanded Functions Qualifying Examination.

Sp Qtr. 1 cl, 1 2-hr lab. Prereq: 451.

**485 Current Concepts in the Practice of Dental Hygiene U 2**

Seminar designed to assist students with legal, ethical, and philosophical concerns of the dental hygienist as a contemporary health care professional.

Sp Qtr. 2 hrs lecture. Prereq: 3rd yr standing in BSDH program. GEC course.

**486 Practicum in Dental Hygiene U 2-6**

Supervised practice outside the traditional clinic in a setting similar to the one in which the dental hygiene student may practice, teach, or conduct research upon graduation.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in dent hyg. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**488 Senior Seminar U 1**

Focus on the current body of dental hygiene knowledge and the relevance to dental hygiene practice.

Au Qtr. 1 cl. Prereq: Graduating sr standing.

**521 Inquiry into Periodontal Care Issues U 2,3**

Advanced periodontics; affords students the opportunity to become involved in data collection for longitudinal research studies in clinical periodontics.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 412 or equiv and sr standing in dent hyg or RDH grad level. Enrollment by permission: selection will be based on student's clinical and didactic performance. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693 Individual Studies in Dental Hygiene U G 1-5**

Advanced studies in any relevant area of dental hygiene.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies in Dental Hygiene U G 1-5**

Group studies in special dental hygiene areas.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission. Repeatable to a maximum of 15 cr hrs.

## Dentistry

1159 Postle Hall, 305 West 12th Avenue, 292-2401

The P mark is used in a designated series or sequence of clinical courses where the mark A, B, C, D, or E is not recorded until the final course of the series or sequence is completed. The P mark indicates that the total sequence has not been completed and authorizes the student to progress into the next consecutive course of that particular series or sequence. This mark of itself indicates neither satisfactory performance or unsatisfactory performance. When a final mark is submitted by the instructor, all previous P marks shall assume and be recorded with the value of the final mark. Until such time as a final mark is recorded, the mark of P shall be given and the credit shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio.

**417 Oral Anatomy P 3**

Anatomy of the oral region, dental morphology with laboratory experience.

Au Qtr. 2 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

**421 Community Dentistry P 1**

History of dentistry; principles of epidemiology, particularly disease of the oral cavity; demographics of oral diseases; and disease prevention procedures from a community standpoint.

Au Qtr. 1 cl. Prereq: Dent 1st yr standing.

**422 Community Dentistry P 2**

Preventive dentistry and patient education; patient motivation and learning; and nutrition and exercise.

Sp Qtr. 2 cl. Prereq: Dent 1st yr standing.

**423 Clinical Evaluative Sciences I P 2**

Introduction to clinical evaluative sciences. Use of evidence in decision making and applying critical thinking based on objective criteria to the evaluation of clinical practice.

Wi Qtr. 2 cl. Prereq: Dent 1st yr standing.

**424 Clinical Evaluative Sciences II P 2**

Methodological and diagnostic tools applicable to evaluation of oral health care for populations and individual patients. Use of systematic measures for quantifying care quality.

Sp Qtr. 2 cl. Prereq: Dent 1st yr standing.

**425 Introduction to Practice Management P 1**

Introduction to basic concepts of finance and business management as related to dental practice management.

Au Qtr. 1 cl.

**430 Restorative Dentistry P 3**

Overview of disease processes and procedures performed by general dentists and factors that determine appropriate treatment.

Au Qtr. 2 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

**432 Restorative Dentistry P 3**

Principles and techniques for inlay, MOD onlay, and complete veneer crown preparation.

Wi Qtr. 1 cl, 6 lab hrs. Prereq: Dent 1st yr standing.

**433 Restorative Dentistry P 2**

Introduction to occlusion, emphasizing form and function; the occlusal role of posterior teeth in mandibular movement is stressed; includes waxing exercises.

Wi Qtr. 1 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

**434 Restorative Dentistry P 3**

Continuation of 432.

Sp Qtr. 1 cl, 6 lab hrs. Prereq: Dent 1st yr standing.

**482 Removable Complete Prosthodontics**

Fabrication of complete dentures: impression making, cast mounting, arranging artificial teeth, processing acrylic resin and finishing, polishing, and completing dentures.

Prereq: Dent 2nd yr standing.

**482.01 Lecture P 1**

Au Qtr.

**482.02 Laboratory P 1**

Laboratory for 482.01.

Au Qtr. 4 lab hrs.

**489 Removable Partial Prosthodontics**

Prereq: Dent 2nd yr standing.

**489.01 Lecture P 1**

An introduction to the principles of design and construction of removable partial dentures.

Wi Qtr. 1 cl.

**489.02 Laboratory P 1**

Wi Qtr. 4 lab hrs.

**505 Fundamental Principles of Oral Surgery P 2**

Basic principles of oral surgery; patient evaluation and management, surgical instrumentation theory and technique for infection control, teeth extraction, and restorative preparation.

Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**510 Oral Biology P 4**

Integrated craniofacial biology: cell and molecular biology, developmental biology and human genetics.

Wi Qtr. 4 cl. Prereq: Dent 1st yr standing.

**514 Oral Biology P G 4**

Integrated craniofacial biology: oral structure and function and wound healing.

Sp Qtr. 4 cl. Prereq: Dent 1st yr standing.

**516 Oral Microbiology P 2**

Microbiology of the oral cavity and its relationship to caries, pulpal and periapical infections and periodontal disease.

Sp Qtr. 2 cl. Prereq: Dent 2nd yr standing.

**518 Oral Physiology P 2**

Physiology of the sensory, motor and glandular functions of the oral region.

Sp Qtr. 2 cl. Prereq: Dent 2nd yr standing.

**521 Behavioral Factors in Dentistry P 1**

Examination of the principles and dynamics of human behavior with emphasis on the psychosocial components of dentist-patient relationships and their consequences for dental practice.

Au Qtr. 1 cl. Prereq: Dent 1st yr standing.

**522 Clinical Geriatric Dentistry P 1**

Delivery of clinical dental care to elderly populations at nursing homes and geriatric clinics.

Su, Au, Wi, Sp Qtrs. 1 day per week.

**524 Clinical Evaluative Sciences III P 2**

Use of research methods and statistics for evaluating scientific literature and practice decisions.

Au Qtr. 2 cl. Prereq: Dent 2nd yr standing.

**531 Restorative Dentistry P 2**

Theory, principles, and procedures for tooth preparations to receive posterior metal ceramic crowns; includes the fabrication of a metal ceramic fixed partial denture.

Au Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

**532 Restorative Dentistry P 2**

Functional and cosmetic aspects of anterior teeth; continuing of the study of mandibular movement.

Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

**533 Restorative Dentistry P 2**

Restoration of posterior teeth using composite resin, amalgam, and glass ionomer materials.

Wi Qtr. 1 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

**534 Restorative Dentistry P 2**

Contemporary aesthetic dental treatments; aesthetic restorative methods and materials in operative dentistry.

Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

**535 Restorative Dentistry P 3**

Theory, principles, and techniques for anterior tooth preparations to receive aesthetic crowns and fixed partial dentures.

Wi Qtr. 1 cl, 6 lab hrs. Prereq: Dent 2nd yr standing.

**536 Restorative Dentistry P**

Theory and techniques for fabricating correctly contoured provisional restorations; cast posts/cores; porcelain application and customizing (contouring, staining, and glazing).

**536.01 Restorative Dentistry I P 2**

Theory and technique for the restoration of endodontically treated teeth.

Wi Qtr. 4 lecture/lab hrs. Prereq: Dent 2nd yr standing.

**536.02 Restorative Dentistry II P 1**

Theory and technique for fabricating metal and ceramic restorations.

Su Qtr. 3 lecture/lab hrs. Prereq: Dent 3rd yr standing.

**537 Restorative Dentistry P 2**

Theory, principles, and techniques for restoring atypically damaged single teeth with directly placed and cast materials.

Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

**538 Restorative Dentistry P 2**

Complex esthetic restorations, diagnosis, treatment planning and care delivery including diastema closures, resin and porcelain veneers, ceramic and composite inlays, intracoronal restorations, onlays.

Au Qtr. Prereq: Dent 2nd yr standing.

**544 Physical Evaluation P 2**

Basic and current concepts in dental management of ambulatory patients with compromised medical systems; diagnosis and management of common dental office emergencies.

Wi Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**545 Diagnostic Sciences I P 2**

Dental patient evaluation that identifies dental and pertinent medical problems including head, neck, and oral cavity examinations; managing lab tests, and radiographs and diagnosis.

Wi Qtr. 2 cl. Prereq: Dent 2nd yr standing.

**548 Diagnostic Sciences II P 3**

Oral diagnosis, radiology, and pathology; radiographic techniques and interpretation; clinical appearance and diagnosis of normal and non-normal oral anatomy.

Sp Qtr. 3 cl. Prereq: Dent 2nd yr standing.

**551 Pediatric Dentistry P 2**

Introduction to pediatric dentistry emphasizing prevention, diagnosis and treatment of dental caries and pulp therapy. Laboratory techniques required for sealants, restorations and pulpotomy.

Su Qtr. 1 cl, 4 lab hrs. Prereq: Dent 3rd yr standing.

**556 Orthodontics P 1**

An introduction to craniofacial growth and development with applications toward orthodontic care.

Wi Qtr. 1 cl. Prereq: Dent 1st yr standing.

**564 Periodontology P 3**

Diagnosis etiology and activity of periodontal diseases; biology and pathophysiology of the disease process.

Wi Qtr. 3 cl. Prereq: Dent 2nd yr standing.

**565 Periodontology P 3**

Examination treatment planning and instrumentation of the periodontal diseased patient; clinical and interdisciplinary management of periodontal diseases.

Sp Qtr. 2 cl, 6 3-hr clinics. Prereq: Dent 2nd yr standing.

**567 Endodontics P 1**

Basic techniques and procedures used in the treatment of pulpless teeth.

Au Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**568 Endodontics P 1**

Laboratory experience in endodontics.

Wi Qtr. 16 lab hrs for 1 wk. Prereq: Dent 2nd yr standing. This course is graded S/U.

**569 Endodontics P 1**

The rationale and prognosis of endodontic procedures; application of treatment techniques peculiar to endodontics, including radiography, intracanal preparations, and root fillings.

Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**571 Pharmacology P 1**

Introductory pharmacology including pharmacodynamics, pharmacokinetics, pharmacotherapeutics, neuromuscular blocking drugs, anti-diabetic agents, hormones, local anesthetics, drug regulations, prescription writing, and drug abuse.

Au Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**572 Pharmacology P 1**

Autonomic pharmacology including cholinergics, anti-cholinergics, adrenergics, anti-adrenergics, and respiratory drugs; anti-inflammatory drugs, narcotic, and non-narcotic analgesics.

Wi Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**579 Local Anesthesiology P 1**

The theory, chemistry, and techniques of local anesthesia for dental procedures.

Sp Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**583 Removable Complete Prosthodontics P 1**

The clinical implications of complete denture construction.

Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**587 Removable Partial Prosthodontics**

Prereq: Dent 2nd yr standing.

**587.01 Lecture P 1**

Introduction to removable partial denture vocabulary, concepts, and philosophy of treatment.

Sp Qtr. 1 cl.

**587.02 Laboratory P 1**

Sp Qtr. 4 lab hrs.

**589 Removable Partial Prosthodontics P 1**

The advanced principles and design of removable partial dentures and their clinical applications.

Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**593 Individual Studies P 1-12**

Individual studies in any of the recognized fields of dentistry.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is letter graded.

**601 Clinical Oral Surgery P 2**

Evaluation, diagnosis, treatment planning, surgery, and post-operative management of patients in clinic.

Sp Qtr. 4 clinic hrs. Prereq: Dent 3rd yr standing. This course is graded S/U.



**603 Oral Surgery P 1**

Overview of non-dental pain in head and face emphasizing temporomandibular disorders. Includes pain neurophysiology, management principles, working diagnosis and initial management or referral.

Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**616 Clinical Primary Care Dentistry P 7**

Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Su Qtr. 4 clinic hrs/credit hr. Prereq: Dent 3rd yr standing.

**617 Clinical Primary Care Dentistry P 8**

Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Au Qtr. 4 clinic hrs/credit hr. Prereq: Dent 3rd yr standing.

**618 Clinical Primary Care Dentistry P 8**

Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Wi Qtr. 4 clinic hrs/credit hr. Prereq: Dent 3rd yr standing.

**619 Clinical Primary Care Dentistry P 8**

Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Sp Qtr. 4 clinic hrs/credit hr. Prereq: Dent 3rd yr standing.

**620 Orientation to Clinical Dentistry P 1-10**

Interdisciplinary orientation and direct guidance to clinical practice including clinical policies; procedures; time, patient, and treatment management through individual conferences, classroom presentations, and clinical practice.

Su, Au, Wi, Sp Qtrs. Prereq: Dent 3rd yr standing. Repeatable to a maximum of 18 or hrs.

**621 Dental Ethics P 1**

Advanced study and critical analysis of the ethical issues associated with the day to day practice of the profession.

Au, Wi, Sp Qtrs. 3 3-hr cl. Prereq: Dent 3rd yr standing.

**623 Community Dentistry P 1**

Dental care for the special-needs patient; understanding of the total patient situation, mobility, psychosocial, medical issues, and interpersonal relations.

Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**625 Practice Management I P 1**

Dental practice planning and development. Personnel, time and information management.

Au Qtr. 1 cl.

**626 Practice Management II P 1**

Accounting and financial planning as related to dental practice management.

Sp Qtr. 1 cl.

**627 Practice Management III P 1**

Legal issues related to dental practice management. Practice purchase and associateships.

Su Qtr. 1 cl.

**629 Dental Materials P 1**

Topics include: requirements of ideal materials, sources for evaluation, comparison of testing procedures, clinical evidence and criteria, evaluation of dental laboratories, material selection.

Wi Qtr. 1 cl. Prereq: Dent 4th yr standing. This course is graded S/U.

**630 Restorative Dentistry P 2**

Techniques for collecting information necessary to diagnose accurately and plan complex prosthodontic care; integrates theory into clinical practice.

Sp Qtr. 1 cl, 3 lab/clinic hrs. Prereq: Dent 2nd yr standing.

**631 Restorative Dentistry P 1**

Restorative clinical requirements and procedures plus information on tooth isolation, pulpal protection, laboratory prescriptions and protocol, and pulpal response to restorative procedures.

Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**632 Restorative Dentistry P 1**

Comprehensive diagnosis and treatment planning for restorative and prosthetic dentistry.

Au Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**633 Restorative Dentistry P 1**

Clinically applied principles for restorative and fixed prosthodontics; includes fluid control, soft-tissue management, electrosurgery, posts and cores, crowns, and fixed partial dentures.

Wi Qtr. 1 cl. Prereq: Dent 3rd yr standing. This is a Progress course.

**634 Restorative Dentistry P 1**

Complex prosthodontic treatment considerations; presents treatment considerations for patients with temporomandibular disorders, removable partial dentures, and worn dentitions.

Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**638 Restorative Dentistry P 1**

This course will enable the participant to recognize the need to restore dentition utilizing contemporary dental implants.

Au Qtr. 1 lec per week plus 15 total arranged lab/clinic hrs. Prereq: Dent 3rd yr standing. A 'P' mark as defined by the College of Dentistry may be used. This is a Progress course.

**639 Clinical Implant Dentistry P 1**

Introductory laboratory and clinical experiences in contemporary surgical and restorative implant dentistry.

Su Qtr. 16 clinic hrs total. This course is graded S/U.

**645 Diagnostic Sciences III P 2**

Provides etiology, pathogenesis, clinical and microscopic features, and management of mucocutaneous disorders, microbial disease, reactive lesions, AIDS, and salivary gland disease.

Su Qtr. 2 cl. Prereq: Dent 3rd yr standing.

**646 Microbiology P G 4**

Medical microbiology and its clinical application to dental practice.

Au Qtr. 3 cl. Prereq: Dent 2nd yr standing or permission of instructor.

**647 Immunology P G 2**

Basic immunology and its clinical application to dental practice.

Au Qtr. 2 cl. Prereq: Dent 2nd yr standing or permission of instructor.

**648 Diagnostic Sciences IV P G 2**

Oral pathology; study of clinical appearance epidemiology, etiology, diagnosis, and histopathology of common and rare lesions of oral hard and soft tissues.

Au Qtr. 2 cl. Prereq: 514, Path 655, and Dent 3rd yr standing.

**651 Pediatric Dentistry****651.01 Pediatric Dentistry Lecture P 3**

Treatment planning for pediatric dentistry. Includes discussion of child development, behavioral management, developmental disabilities, space maintenance, periodontal conditions, trauma.

Au Qtr. 3 cl. Prereq: Dent 3rd yr standing.

**652 Pediatric Dentistry****652.02 Clinical Pediatric Dentistry P 1**

Clinical series continued in 653; may include rotation at Nisonger Center.

Wi Qtr. 4 clinic hrs. Prereq: Dent 3rd yr standing. This is a Progress course. A 'P' mark as defined by the College of Dentistry may be used.

**653 Clinical Pediatric Dentistry P 1**

Continuation of 652.02; clinic may include rotation at Nisonger Center.

Sp Qtr. 4 clinic hrs. Prereq: 652.02. This is a Progress course. A 'P' mark as defined by the College of Dentistry may be used. This is the final course in the series.

**654 Orthodontics P 1**

Introduction to diagnosis of orthodontic conditions and recognizing potential orthodontic problems. Overview of the treatment planning process.

Sp Qtr. 1 cl. Prereq: Dent 1st yr standing.

**655 Orthodontics P 1**

Sequencing and stages of the orthodontic treatment process. Special emphasis on limited and adjunctive orthodontic procedures.

Au Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**656 Orthodontics P 1**

Adjunctive and comprehensive orthodontic treatment in adults; biology and mechanics of tooth movement, preprosthetic treatment, surgical treatment, plus retention.

Wi Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**657 Orthodontic Technique P 2**

Laboratory/clinical technique involving diagnostic, treatment planning, and biomechanical aspects of orthodontic care.

Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

**658 Clinical Orthodontics I P 3**

Clinical orthodontic course entailing the provision of limited tooth movement.

Sp Qtr. Prereq: Dent 3rd yr standing. This course is graded S/U.

**559 Orthodontics**

Prereq: Dent 4th yr standing.

**659.02 Orthodontic Case Presentation P 1**

Students present completed orthodontic treatment cases in a seminar setting.

Wi Qtr. 1 cl.

**660 Clinical Periodontics P 1**

Clinical rotation in graduate periodontics. Assist and observe patient treatment and participate in small group seminars.

Sp Qtr. This course is graded S/U.

**664 Periodontology P 2**

Advanced treatment modalities for the management of periodontal diseases with emphasis on surgical corrective techniques; current developments in clinical periodontics.

Su Qtr. 2 cl. Prereq: Dent 3rd yr standing.

**666 Clinical Periodontology P 1**

Periodontology clinical diagnostic exam and dental prophylaxis (scaling) exam.

Sp Qtr. Arr. Prereq: Dent 3rd yr standing.

**668 Clinical Endodontics I P 1**

Clinic.

Wi Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing. This is a Progress course. This course is offered in a series with 669. A 'P' mark as defined by the College of Dentistry may be used.

**669 Clinical Endodontics II P 2**

A continuation of 668.

Sp Qtr. 4 clinic hrs. Prereq: Dent 3rd yr standing. This is a Progress course. This course is offered in a series with 668. This is the final course of the series. A 'P' mark as defined by the College of Dentistry may be used.

**672 Pharmacology P 1**

Review of autonomic pharmacology, psychopharmacology including antipsychotics and antidepressants, anti-Parkinson's therapy, and the principles, mechanisms, classifications, uses of antibiotic, and chemotherapeutic agents.

Au Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**684 Removable Complete Prosthodontics P 3**

Block assignment of integrated didactic, laboratory, and clinical removable prosthetic instruction. Laboratory competency examination of Dent III students' ability to provide complete prosthodontic treatment.

Su Qtr. 36-hr block. Prereq: Dent 3rd yr standing.

**693 Individual Studies in Dentistry P G 1-12**

Individual studies in any of the recognized fields of dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable. This course is graded S/U.

**700 Special Problems**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Dent postgrad or grad standing.

**700.01 Advanced Oral Surgery and Anesthesia P G 1-15**

Diagnosis and treatment of surgical conditions of the teeth and contiguous structures; advanced techniques in surgery and local and general anesthesia.

Repeatable.

**700.02 Advanced Orthodontics P G 1-15**

Applied osteology and myology in cephalometric roentgenographic interpretations; review of cephalic growth and development factors in normal occlusion; correction of malocclusions and dento-facial malformations.

Repeatable.

**700.03 Advanced Periodontics P G 1-15**

Diagnosis and treatment of periodontal disease; correlation between the disease of the periodontium and probable systemic diseases, and management of diseases of a purely dental origin.

Repeatable.

**700.04 Advanced Prosthodontics P G 1-15**

The diagnosis, treatment, and replacement of missing or lost teeth and parts of the mouth by prosthetic appliances; complete removable partial or fixed restorations.

Repeatable.

**700.05 Advanced Oral Pathology and Diagnosis P G 1-15**

The interrelationships of gross microscopic and clinical pathology; current advances in the field of oral pathology and diagnosis.

Repeatable.

**700.06 Advanced Endodontics P G 1-15**

The diagnosis of pulp and periapical diseases and their treatment by surgical and non-surgical techniques.

Repeatable.

**700.07 Advanced Pedodontics P G 1-15**

Lectures, seminars, and clinical practice encompassing all phases of pedodontics and interceptive orthodontics.

Repeatable.

**700.08 Advanced Dental Materials P G 1-15**

The science of dental materials.

Repeatable.

**700.09 Advanced Oral Histology and Embryology P G 1-15**

The principles of histology and embryology applied to the structures in the oral region-their development, morphology, functions, and clinical relationships.

Repeatable.

**700.10 Advanced Operative Dentistry P G 1-15**

Clinical problems in operative dentistry and their correlation with problems in related fields of dentistry; special emphasis on preventive dentistry.

Repeatable.

**701 Advanced Clinical Oral Maxillofacial Surgery P 8**

Clinical experience in removal of teeth, biopsy, minor preprosthetic, and post operative patient care.

Su, Au, Wi, Sp Qtrs. 60 clinic hour block. Prereq: Dent 4th yr standing. This course is graded S/U.

**704 Advanced Oral and Maxillofacial Surgery P 2**

Areas of oral and maxillofacial surgeries; dentofacial deformities; trauma; reconstructive surgery; cysts and tumors; TMJ; head and neck infections; and advanced dentoalveolar surgery techniques.

Au Qtr. 2 cl. Prereq: Dent 4th yr standing.

**708 Hospital Dentistry**

Defines the role of the hospital in the treatment of dental patients and provides experience in the hospital so the dentist can contribute to total patient care.

Su, Au, Wi, Sp Qtrs. 1 week. Prereq: Dent 3rd yr standing.

**708.02 Clinic: University Hospital P 1**

In-patient and out-patient general anesthesia, operating room, emergency room, out-patient dentistry, clinics, hospital pathology service, medicine and surgery conferences, ward rounds, laboratory services, oral surgery rounds.

Su, Au, Wi, Sp Qtrs. 1 4-hr clinic. This course is graded S/U.

**708.03 Clinic: Children's Hospital P 1**

Operating room, emergency room, out-patient dentistry, out-patient clinics, observation in general anesthesia, medical and surgical conferences, ward rounds, laboratory services.

Su, Au, Wi, Sp Qtrs. 1 4-hr clinic. This course is graded S/U.

**716 Clinical Primary Care Dentistry P 8**

Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Su Qtr. 4 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

**717 Clinical Primary Care Dentistry P 8**

Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Au Qtr. 4 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

**718 Clinical Primary Care Dentistry P 8**

Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Wi Qtr. 4 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

**719 Clinical Primary Care Dentistry P 12**

Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Sp Qtr. 4 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

**720 Advanced Clinical Dentistry P 1-12**

Interdisciplinary orientation and direct guidance to clinical practice including clinical policies; procedures; time, patient, and treatment management through individual conferences, classroom presentations, and clinical practice.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Dent 4th yr standing. Repeatable to a maximum of 30 cr hrs.

**730 Restorative Dentistry P 2**

Restorative and prosthetic concepts focusing on information essential to successful general practice including that sought by National Board and Regional licensing authorities.

Au Qtr. 2 cl. Prereq: Dent 4th yr standing.

**734 Clinical Restorative Dentistry P 2**

Clinical competency examinations; examinations of senior students' ability to perform efficient, high quality routine dentistry.

Wi Qtr. 2 hrs clinical. Prereq: Dent 4th yr standing.

**742 Oral Pathology P G 1**

A review of common oral lesions with emphasis on cause, clinical appearance, signs, symptoms, diagnosis, treatment and management.

Su Qtr. 1 cl. Prereq: Dent 4th yr standing.

**744 Clinical Oral Pathology P 2**

Review of common oral and paraoral diseases, with emphasis on clinical aspects, diagnosis, and management of various lesions.

Au Qtr. 1 2-hr cl. Prereq: Dent 4th yr standing.

**747 Clinical Oral Radiology I P 1**

Au Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.

**748 Clinical Oral Radiology II P 1**

A continuation of 747.

Wi Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.

**749 Clinical Oral Radiology III P 1**

A continuation of 748.

Sp Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.

**751 Clinical Pediatric Dentistry P 1**

Clinical series with 752; course may include rotation at Nisonger Center.

Su Qtr. 4 hrs clinic. Prereq: Dent 4th yr standing. This is a Progress course. A 'P' mark as defined by the College of Dentistry may be used.

**752 Clinical Pediatric Dentistry P 1**

Continuation of 751; course may include rotation at Nisonger Center.

Au Qtr. 4 hrs clinic. Prereq: 751. This is a Progress course. A 'P' mark as defined by the College of Dentistry may be used. This is the final course in the series.

**756 Orthodontics Treatment Planning Skills P 1**

Diagnosis and treatment-planning instruction/analysis to promote integration of pediatric dentistry, orthodontics, periodontics, and prosthodontics.

Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**758 Clinical Orthodontics II P 3**

Clinical orthodontic course entailing the provision of limited tooth movement.

Wi Qtr. 6 hrs clinical. Prereq: Dent 4th yr standing. This course is graded S/U.

**768 Clinical Endodontics III P 2**

Clinic.

Au Qtr. 4 clinic hrs. Prereq: Dent 4th yr standing. This is a Progress course. This course is offered in a series with 769. A 'P' mark as defined by the College of Dentistry may be used.

**769 Clinical Endodontics IV P 1**

A continuation of 768.

Wi Qtr. 2 clinic hrs. Prereq: Dent 4th yr standing. This is a Progress course. This course is offered in a series with 768. This is the final course of the series. A 'P' mark as defined by the College of Dentistry may be used.

**771 Pharmacology P 1**

Pharmacology of drugs used primarily for medical conditions including cardiac glycosides, anti-arrhythmics, calcium channel blockers, anti-anginals, anti-hypertensives, anti-coagulants, anti-neoplastics, and gastrointestinal medications.

Su Qtr. 1 cl. Prereq: Dent 4th yr standing.

**776 Clinical Periodontology P 1**

Periodontology written periodontal exam and clinical exam of diagnostic findings, scaling and root planing.

Au Qtr. Arr. Prereq: Dent 4th yr standing.

**777 Clinical Periodontology P 1**

Periodontology clinical examination, NE Regional Dental Board format.

Wi Qtr. Arr. Prereq: Dent 4th yr standing.

**778 Anxiety and Pain Control P 2**

Principles of anxiety control by sedative techniques with nitrous oxide-oxygen conscious sedation and with oral I.M. or I.V. light conscious sedation; methods of pre-operative assessment, monitoring, and management of complications; a review of light sedation, deep sedation, and general anesthesia.

Wi Qtr. 2 cl. Prereq: Dent 3rd yr standing.

**785 Removable Complete Prosthodontics P 2**

Clinical competency examination; examination of Dent IV students' ability to provide removable complete prosthodontic treatment.

Wi Qtr. 6 clinic hrs. Prereq: Dent 4th yr standing.

**789 Experiential Education in Dentistry P 0**

Advanced clinical patient care.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Graduating 4th yr or other dental student with special permission. Repeatable. This course is graded S/U.

**790 Advanced Dental Topics or Problems**

Lectures and discussions of current topics, laboratory or clinical participation in problems or investigation related to dentistry. Presented by faculty, guest lecturers or clinicians.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Open only to dent students who meet college stated prereqs and who have permission of the college office and instructor. Maximum number of cr hrs course may be repeated varies with student's standing and according to criteria established by college.

**790.01 Community Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.02 Community Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.03 Community Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.04 Community Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.05 Community Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.06 Community Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.07 Community Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.08 Fixed Prosthodontics P 1-6**

Repeatable. This course is graded S/U.

**790.09 Fixed Prosthodontics P 1-6**

Repeatable. This course is graded S/U.

**790.10 Fixed Prosthodontics P 1-6**

Repeatable. This course is graded S/U.

**790.11 Fixed Prosthodontics P 1-6**

Repeatable. This course is graded S/U.

**790.12 Fixed Prosthodontics P 1-6**

Repeatable. This course is graded S/U.

**790.13 Fixed Prosthodontics P 1-6**

Repeatable. This course is graded S/U.

**790.14 Fixed Prosthodontics P 1-6**

Repeatable. This course is graded S/U.

**790.15 Endodontics P 1-6**

Repeatable. This course is graded S/U.

**790.16 Endodontics P 1-6**

Repeatable. This course is graded S/U.

**790.17 Endodontics P 1-6**

Repeatable. This course is graded S/U.

**790.18 Endodontics P 1-6**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**790.19 Endodontics P 1-6**

Repeatable. This course is graded S/U.

**790.20 Endodontics P 1-6**

Repeatable. This course is graded S/U.

**790.21 Endodontics P 1-6**

Repeatable. This course is graded S/U.

**790.22 Operative Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.23 Operative Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.24 Operative Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.25 Operative Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.26 Operative Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.27 Operative Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.28 Operative Dentistry P 1-6**

Repeatable. This course is graded S/U.

**790.29 Oral Biology P 1-6**

Repeatable. This course is graded S/U.

**790.30 Oral Biology P 1-6**

Repeatable. This course is graded S/U.

**790.31 Oral Biology P 1-6**

Repeatable. This course is graded S/U.

**790.32 Oral Biology P 1-6**

Repeatable. This course is graded S/U.

**790.33 Oral Biology P 1-6**

Repeatable. This course is graded S/U.

**790.34 Oral Biology P 1-6**

Repeatable. This course is graded S/U.



**792.07 Physical Diagnosis P G 1-5**

Physical evaluation of the dental patient and its correlation with the required treatment.

Repeatable.

**792.12 Errors in Measurement P G 1-5**

Discussion of distribution functions as applied to random errors and the propagation of error.

Su Qtr. 1 cl. Prereq: College algebra or equiv. Repeatable. Designed to acquaint MS candidates in dentistry with errors in physical research.

**792.13 Oral Microbiology P G 1-5**

Discussion of oral and systemic diseases with oral manifestation of bacterial, viral, and immunologic etiology.

Sp Qtr. 2 cl. Repeatable.

**792.14 Behavioral Sciences in Dentistry P G 1-5**

A study of the psychological aspects of dental treatment involving the dentist, patients, and dental office staff.

Repeatable to a maximum of 5 cr hrs.

**792.16 Principles of Mechanics for Orthodontists P G 4**

Study of basic mechanical principles including forces, moments, couples, displacements, rotations, equilibrium, stress-strain, and properties of orthodontic wires.

Wi Qtr. 2 4-hr cl, 2 hr lab. Prereq: Enrollment in grad orthodontics program. Open only to grad students in orthodontics.

**792.17 Gerontology for the Health Professions G 3**

Impact of the physiologic and socio-economic conditions associated with an aging society examined from the health professions perspective.

Au Qtr. 1 3-hr cl. Open to sr level students with permission of instructor.

**792.18 Research Topics in Oral Biology G 1**

Presentations by oral biology faculty on their own ongoing research projects.

Au Qtr. 1 cl. Prereq: Permission of instructor.

**792.19 General Dentistry P G 1-5**

Lectures in special phases of dentistry — general principles of general dental practice primary oral healthcare, and related aspects, including practice management, etc.

1-5 hrs seminar and discussion, variable each qtr. Prereq: DDS degree or equiv and permission of instructor. Repeatable. Introduction to the principles of dental specialties in general practice for the graduate in general dentistry.

**792.20 Hospital Dentistry P G 1-5**

Lectures in special phases of dentistry — general principles of general hospital dental practice and care of the medical patient.

1-5 seminars. Prereq: DDS or equiv and permission of instructor. Repeatable. Introduction to the principles of interrelationships of medicine and dentistry and the application of these in general practice.

**792.21 Legal Issues in Developing and Managing a Dental Practice G 2**

This course outlines and discusses legal issues that a dental professional will be confronted with in dental practice.

Wi Qtr. 10 lecture and discussion sessions. Prereq: Grad standing in a Postdoctoral dental program or permission of instructor. Repeatable.

**792.22 Surgical Orthodontics G 2**

To provide the didactic component of the dentofacial deformities program and a prerequisite for participating in the clinical component of interdisciplinary management of patients.

Wi, Sp Qtrs. 1 2-hr cl. Prereq: Enrolled in a postdoctoral (DDS) program or equiv. Repeatable to a maximum of 4 cr hrs. This is a Progress course. Two qtr sequence. Progress graded first quarter; final grade awarded upon completion of 4 credit hours. This course explains the systematic approach to the diagnosis and treatment planning of complex clinical problems in an interdisciplinary format.

**793 Individual Studies**

Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor.

**793.01 Oral Surgery and Anesthesia P G 1-5**

Repeatable. This course is graded S/U.

**793.02 Orthodontics P G 1-5**

Repeatable. This course is graded S/U.

**793.03 Periodontics P G 1-5**

Repeatable. This course is letter graded.

**793.04 Prosthodontics P G 1-5**

Repeatable. This course is graded S/U.

**793.05 Oral Pathology P G 1-5**

Repeatable. This course is graded S/U.

**793.06 Endodontics P G 1-5**

Repeatable. This course is graded S/U.

**793.07 Pedodontics P G 1-5**

Repeatable. This course is graded S/U.

**793.08 Operative Dentistry P G 1-5**

Repeatable. This course is graded S/U.

**793.09 Oral Diagnosis P G 1-5**

Repeatable. This course is graded S/U.

**793.10 Fixed Partial Prosthodontics P G 1-5**

Repeatable. This course is graded S/U.

**793.11 Oral Radiography P G 1-5**

Repeatable. This course is graded S/U.

**793.12 Oral Biology Laboratory Rotation P G 1-5**

Research activities and training in the laboratory of a program faculty member.

Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**793.13 General Dentistry P G 1-5**

1-5 seminar and discussion hrs; self-paced work. Prereq: DDS degree or equiv, third qtr of post-graduate yr or second post-graduate yr, and permission of instructor. Repeatable. Self-directed course for the upper-level first-yr resident and second-yr resident to pursue areas of interest. This course is graded S/U.

**793.14 Hospital Dentistry P G 1-5**

1-5 seminar and discussion hrs, self-paced work. Prereq: DDS or equiv, third qtr of first post-graduate yr or second post-graduate yr and permission of instructor. Repeatable. Self-directed course for upper level first-yr resident and second-yr resident to pursue areas of interest. This course is graded S/U.

**794 Group Studies**

Group studies on special problems in each specialty of dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor.

**794.01 Oral Surgery and Anesthesia P G 3-5**

Repeatable.

**794.02 Orthodontics P G 3-5**

Repeatable.

**794.03 Periodontics P G 3-5**

Repeatable.

**794.04 Prosthodontics P G 3-5**

Repeatable.

**794.05 Oral Pathology P G 3-5**

Repeatable.

**794.06 Endodontics P G 3-5**

Repeatable.

**794.07 Pedodontics P G 3-5**

Repeatable.

**794.08 Operative Dentistry P G 3-5**

Repeatable.

**794.09 Oral Diagnosis P G 3-5**

Repeatable.

**794.10 Fixed Partial Prosthodontics P G 3-5**

Repeatable.

**794.11 Oral Radiography P G 3-5**

Repeatable.

**795 Seminars in Dentistry**

Discussion of advances in dental science and review of original literature.

Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Dent grad standing.

**795.01 Oral Surgery and Anesthesia P G 1-5****795.02 Orthodontics P G 1-5****795.03 Periodontics P G 1-5**

Wi, Sp Qtrs. This course is graded S/U.

**795.04 Prosthodontics P G 1-5****795.05 Oral Pathology P G 1-5****795.06 Endodontics P G 1-5****795.07 Pedodontics P G 1-5****795.08 Operative Dentistry P G 1-5****795.09 Oral Diagnosis P G 1-5****795.10 Fixed Partial Prosthodontics P G 1-5****795.11 Oral Radiography P G 1-5****795.12 General Dentistry P G 1-5**

Discussion of advances in dental science and review of the original literature that will focus on general community based dental practice and the role of dental specialties.

1-5 hrs of seminar, variable with each qtr. Prereq: DDS or equiv and permission of instructor. Seminar for presentation and discussion of relevant scientific and clinical studies and procedures as they relate to general dental practice.

**795.13 Hospital Dentistry P G 1-5**

The focus in this area will be hospital and institutional based general dental practice.

**796 Specialty Seminars in Dentistry**

Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor.

**796.01 Oral Surgery and Anesthesia P G 1-5**

Repeatable.

**796.02 Orthodontics P G 1-5**

Repeatable.

**796.03 Periodontics P G 1-5**

Repeatable.

**796.04 Prosthodontics P G 1-5**

Repeatable.

**796.05 Oral Pathology P G 1-5**

Repeatable.

**796.06 Endodontics P G 1-5**

Repeatable.

**796.07 Pedodontics P G 1-5**

Repeatable.

**796.08 Operative Dentistry P G 1-5**

Repeatable.

**796.09 Oral Diagnosis P G 1-5**

Repeatable.

**796.10 Fixed Partial Prosthodontics P G 1-5**

Repeatable.

**796.11 Oral Radiography P G 1-5**

Repeatable.

**796.12 Oral Biology Seminar G 1**

Student presentations of recent research findings, both original and from the literature.

Repeatable to a maximum of 2 cr hrs.

**796.13 Advanced General Dentistry P G 1-5**

1-5 hrs seminar, variable with each qtr. Prereq: Permission of instructor and DDS or equiv. Repeatable. Seminar for presentation and discussion of clinical cases and advanced techniques with analysis and discussion of relevant literature.

**796.14 Hospital Dentistry P G 1-5**

1-5 seminar hrs, variable each qtr. Prereq: Permission of instructor and DDS or equiv. Repeatable. Seminar for presentation and discussion of clinical cases and advanced techniques with analysis and discussion of the literature in medicine and dentistry.

**798 Advanced Clinical Practice in Dentistry**

Broad exposure to advanced principles and practices in each specialty of dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to maximum of 120 cr hrs.

**798.01 Oral Surgery and Anesthesia P 3-10**

Repeatable.

**798.02 Orthodontics P 3-10**

Repeatable. This course is graded S/U.

**798.03 Periodontics P 3-10**

Repeatable.

**798.04 Prosthodontics P 3-10**

Repeatable.

**798.05 Oral Pathology P 3-10**

Repeatable.

**798.06 Endodontics P 3-10**

Repeatable.

**798.07 Pedodontics P 3-10**

Repeatable.

**798.08 Operative Dentistry P 3-10**

Repeatable.

**798.09 Oral Diagnosis P 3-10**

Repeatable.

**798.10 Fixed Partial Prosthodontics P 3-10**

Repeatable.

**798.11 Oral Radiography P 3-10**

Repeatable.

**798.12 General Dentistry P 3-10**

The focus in this area will be general community based dental practice. 30 or more hrs of clinical practice time. Prereq: Permission of instructor and DDS or equiv. Repeatable. Clinical practice of application of specialty and general practice principles.

**798.13 Hospital Dentistry P 3-10**

To focus in this area will be hospital and institutional based general practice.

35 or more hrs of clinical practice time. Prereq: Permission of instructor and DDS or equiv. Repeatable. Clinical practice of the application of specialty and general dental and medical principles in general hospital practice.

**801 Epidemiology of Oral Disease G 2**

Principles and techniques used to assess oral disease in human populations.

Au Qtr. Prereq: 800 or permission of instructor.

**802 Introduction to Dental Research Designs G 3**

Conceptual and technical problems in the development and implementation of clinical, behavioral and basic science research projects related to dentistry.

Wi Qtr. 2 1.5-hr cl. Prereq: 800 or permission of instructor.

**803 Biology of Oral Wound Repair G 3**

Cell and molecular events of oral wound repair. Focus on biology of hard and soft tissues of oral cavity as related to advanced clinical dentistry.

Sp Qtr. 2 1.5-hr cl. Prereq: DDS degree or equiv.

**804 Seminars in Dental Public Health G 3**

Principles of dental public health and the methods used for planning, implementing, and evaluation of dental programs. Issues of oral health services delivery; oral health promotion and disease prevention; health policy, program management and administration.

Su, Wi, Sp Qtrs. 1 3-hr cl. Prereq: DDS degree or permission of instructor. Repeatable to a maximum of 9 cr hrs.

**805 Orofacial Pain Management G 2**

Review of common non-dental conditions producing chronic pain in the head and neck region. Neurophysiology of pain, diagnosis and treatment are stressed.

Sp Qtr. 1.5-hr cl. Prereq: DDS or MD degree.

**884 Current Issues in Oral Biology G 3**

Overview of current areas of oral health research.

Su, Au, Wi, Sp Qtrs. 3 hrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course will cover multiple topics of current oral health concern.

**894 Group Studies G 3-5**

Advanced group studies in dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable.

**993 Individual Studies G 3-5**

Advanced individual studies in dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

**999 Research in Dentistry G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Dutch

314 Cunz Hall, 1841 Millikin Road, 292-6985

**571\* Basic Dutch for Reading U G 5**

Fundamentals of grammar for reading purposes; applicable to students in humanities, sciences, social sciences, and professional schools.

Wi Qtr. 5 cl. Prereq: Grad standing or permission of instructor.

**572\* Dutch for Research U G 3**

Continuation of the principles learned in 571; applied readings in students' disciplines; emphasis on close translation, grammatical analysis, and vocabulary building.

Sp Qtr. 3 cl. Prereq: 571 or equiv or permission of instructor.

## East Asian Languages and Literatures

204 Cunz Hall 1841 Millikin Road, 292-5816

Women in East Asian and Asian-American Literature

See Comp Std 314.

**131 East Asian Humanities U 5**

Introduction to the contemporary and traditional cultures of China, Korea, and Japan taught through readings, films, demonstrations, and discussions.

Su, Au, Wi, Sp Qtrs. 5 cl. GEC arts and hums cultures and ideas course.

**151 Masterpieces of East Asian Literature in Translation U 5**

Highlights of Chinese, Japanese, and Korean literature; novels, stories, plays, and poetry from the world's longest continuous cultural tradition.

Su, Au, Wi, Sp Qtrs. 5 cl.

**800 Statistical Inferences and its Application to Dentistry G 3**

Conceptual foundation of statistics related to basic, clinical and behavioral dental sciences.

Su Qtr. Prereq: DDS degree or permission of instructor.

**293 Individual Studies U 1-5**

Individual investigation of problems in East Asian cultures, languages, and literatures.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-10**

Special group studies course in some special area of East Asian language, literature, or culture.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 20 cr hrs.

**323 The Buddhist Tradition U 5**

History and structure of Buddhism from founding to present in South, Southeast, and East Asia; emphasis on rituals, beliefs, and local and regional variations.

5 cl. Prereq: Comp Std 202.01, 202.02, or 270; or Rel Stds 270 recommended. Not open to students with credit for Rel Stds 323. Cross-listed in Religious Studies.

**341 Thought in China and Japan U 5**

The shaping of two cultures; essentials of the major traditional schools of thought in China and Japan and their impact on society.

Sp Qtr. 5 cl. GEC arts and hums cultures and ideas course.

**346 Asian American Film U 5**

Introduction to Asian American cinema from the 1960s to the present, including documentaries, feature films, and experimental films.

Sp Qtr. 2 2-hr cl. GEC arts and hums VPA course.

**H399 East Asian Thought in the Western Imagination, 1600-2000 U 5**

Examination of the construction and impact of Buddhism, Confucianism, and Taoism on a number of Western disciplines, including religion, philosophy, literature, economics, and science.

Sp Qtr. 2 2-hr cl.

**675 Women Writers, Culture, and Society in East Asia U G 5**

Close examination of representative works of major women writers from China, Japan, and Korea in the cultural and ideological context of each country.

Sp Qtr. 2 2-hr cl. No knowledge of East Asian languages is required. All reading materials are in English.

**677 Performance Traditions in Contemporary East Asia U G 5**

Introduction to performance traditions of East Asia (China, Korea, and Japan) as they are practiced today; ethnographic methods.

Sp Qtr. 2 2-hr cl.

**683 Scripts of East Asia U G 5**

A critical survey of writing systems that use Chinese characters, popular and scholarly myths about them, and their impact on the history of ideas.

Au, Sp Qtrs. 2 2-hr cl. Prereq: Chinese or Japanese 103, or permission of instructor.

**693 Individual Studies U G 1-5**

Individual investigation of East Asian cultures, languages, and literatures.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Special topics to be announced in the quarter previous to the one in which the course is offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. cl. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Learning East Asian Languages in Cross-Cultural Contexts: College Level G 4**

Principles and practices of teaching an East Asian language as a foreign language at post-secondary level American academic institutions.

Su Qtr. 5 cl. Prereq: High-level competency in the target East Asian language, concurrent registration in 703 and 704, and permission of instructor. Repeatable to a maximum of 8 cr hrs.

**701 Pedagogical Syntax for East Asian Languages U G 5**

Training in the presentation of grammar in East Asian language classes; special attention given to problems of translating linguistic studies into teachable units.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**702 Materials Preparation for East Asian Languages U G 5**

Preparation of materials for teaching Chinese, Japanese, and Korean; emphasis on the special problems faced by English-speaking students in learning these languages.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**703 Presentation of East Asian Languages and Cultures: College Level G 4**

Preparation and presentation of curriculum and syllabus for East Asian language program at the college level.

Su Qtr. 5 cl. Prereq: High-level competency in the target East Asian language, concurrent registration in 700 and 704, and permission of instructor. Repeatable to a maximum of 8 cr hrs.

**704 Teaching Practicum in East Asian Languages: College Level U G 3-7**

Training as a classroom teacher through practice teaching to college students and the observation of classes taught by trainees and master teachers.

Su, Au, Wi, Sp Qtrs. 10 cl. Prereq: High-level competency in the target East Asian language, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**705 Seminar in the Learning of East Asian Languages and Cultures U G 5**

Critical analysis and discussion of insights and theories from various disciplines relevant to the pedagogy of East Asian languages and cultures.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: High level competence in an East Asian language, grad standing or advanced undergrad standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**710 Learning East Asian Languages in Cross-Cultural Contexts: High School Level G 2**

Principles and practices of teaching an East Asian language as a foreign language in American high schools.

Su Qtr. 5 cl per week for 4 weeks. Prereq: Intermediate to high competency in the target East Asian language, concurrent registration in 713 and 714, and permission of instructor. Repeatable to a maximum of 4 cr hrs.

**713 Presentation of East Asian Languages: High School Level**

Principles and practices of an East Asian language at the high school level.

Su Qtr.

**713.01 Year One G 2**

5 cl per week for 4 weeks. Prereq: Intermediate to high competency in the target East Asian language, concurrent registration in 710 and 714.01, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This is a Progress course. Credit will be given upon completion of 713.02.

**713.02 Year Two G 1**

5 cl per week for 2 weeks. Prereq: Intermediate to high competency in the target East Asian language, 710 and 713.01, concurrent registration in 714.02, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This is a Progress course.

**714 Teaching Practicum in East Asian Languages: High School Level**

Training as a classroom teacher through practice teaching to high school students and the observation of classes taught by trainees and master teachers.

Su Qtr.

**714.01 Year One G 2**

10 cl per week for 4 weeks. Prereq: Intermediate to high competency in the target East Asian language, concurrent registration in 710 and 713.01, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This is a Progress course. Credit will be given upon completion of 714.02.

**714.02 Year Two G 2**

10 cl per week for 2 weeks. Prereq: Intermediate to high competency in the target East Asian language, 710 and 714.01, concurrent registration in 713.02, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This is a Progress course.

**801 Teaching East Asian Languages at the College Level G 5**

Methods and techniques of teaching college-level East Asian languages; selection and preparation of teaching, testing, and laboratory materials; observation of a variety of language classes.

Au Qtr. Two wks intensive workshop previous to qtr followed by a 2-hr wkly cl. Prereq: Permission of instructor. Not open to students with credit for Chinese or Japanese 801. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs.

**850 Analytical Methods G 5**

Introduction to the literary and linguistic analysis of Chinese and Japanese texts.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Chinese or Japanese 800.



## East European Languages and Literatures

232 Cunz Hall, 1841 Millikin Road, 292-6733

Also see Slavic Languages and Literatures

### 294 Group Studies U 1-5

Topics related primarily to Albanian, Estonian, Hungarian, Latvian, and Lithuanian.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. Each language repeatable to a maximum of 20 cr hrs.

### 671 Grammar of Selected East European Languages U G 5

Fundamentals of grammar as required for reading one of the following: Albanian, Estonian, Hungarian, Latvian, Lithuanian, or Romanian.

Prereq: Permission of instructor. Repeatable to a maximum of 25 cr hrs. Individual languages not repeatable.

### 672 Reading of Selected East European Languages U G 5

Reading of elementary and intermediate texts and translating into English one of the following: Albanian, Estonian, Hungarian, Latvian, Lithuanian, or Romanian.

Prereq: 671 (same language) or equiv, and permission of instructor. Repeatable to a maximum of 25 cr hrs. Individual languages not repeatable.

### 693 Individual Studies U G 1-10

Topics related primarily to Albanian, Estonian, Hungarian, Latvian, Lithuanian, and Romanian.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of chairperson. Repeatable to a maximum of 20 cr hrs. Including cr hrs earned in 693.40. This course is graded S/U.

### 694 Group Studies U G 1-10

Topics related primarily to Albanian, Estonian, Hungarian, Latvian, Lithuanian, and Romanian.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. Each language repeatable to a maximum of 20 cr hrs.

### 697 Study at a Foreign Institution U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

## Economics

410 Arps Hall, 1945 North High Street, 292-6701

### 110 Current Economic Events in Historical Perspective U 5

Introduction to elementary techniques of economic analysis; historical background useful for interpreting current economic events.

Au Qtr. 2 2-hr cl or 4 1-hr cl. Intended for students who desire a one-course introduction to economics. GEC soc sci human, natural, and economic resources course.

### 200 Principles of Microeconomics U 5

Introduction to economic theory: supply and demand for goods and services; market structure; the distribution of income.

Su, Au, Wi, Sp Qtrs. 5 cl. H200 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. First required course for students planning to take 500-level courses in econ. GEC soc sci human, natural, and economic resources course.

### 201 Principles of Macroeconomics U 5

Theory of national income determination; economic fluctuations; money; government policy; international economics.

Su, Au, Wi, Sp Qtrs. 5 cl. H201 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 400. GEC soc sci organizations and politics course.

### H271 Law and Economics U 5

Study of the use of economic analysis to understand the sources of legal rules and the effect of those rules on society.

Sp Qtr. 2 2-hr cl. Prereq: H200 recommended and enrollment in an honors program.

### 294 Group Studies U 1-5

Current problems not covered in other courses; application of economic analysis of scarcity and choice of current policy significance.

5 cl. Prereq: 100 or 200 or equiv. Repeatable to a maximum of 10 cr hrs.

### 367 Second Writing Course

2 2-hr cl or 4 1-hr cl. Prereq: 200 and 201 or 400, or equivs. GEC second writing courses.

#### 367.01 The American Economy in the 20th Century U 5

Survey of major economic developments in the American economy during the 20th century.

Au, Wi, Sp Qtrs.

#### 367.02 Current Economic Issues in the United States U 5

Study of problems currently facing the U.S. economy.

Su, Au, Wi, Sp Qtrs.

### 443 The Analysis and Display of Data U 5

Analysis of data; introduction to the internet; introduction to techniques in the graphical presentation of data; designed for economics and international studies majors.

Sp Qtr. 2 2-hr cl, lab arr. Prereq: Completion of GEC data analysis requirement. Not open to students with credit for Int Stds 443. Cross-listed in International Studies.

### 444 Elementary Econometrics U 5

Basic methods of data analysis used in economics, including descriptive statistics, hypothesis testing, and regression analysis.

Su, Au, Wi, Sp Qtrs. 4 1-hr cl, or 2 2-hr cl. Prereq: Stat 145 or 245, or AED Econ 205 or equiv.

### 501 Intermediate Microeconomic Theory U G 5

Theory of consumer behavior; theory of the firm; costs and production; factor price determination; general equilibrium.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 200 and 201 or 400, or equivs.

A—Designates a calculus based version which requires Math 132 or 151 or 152 or 153 or 161 or 162 or 263 or H263 or H190, or equiv, or permission of instructor.

### 502 Intermediate Macroeconomic Theory U G 5

Analysis of the determinants of national output, income and employment levels; theory of economic growth and progressive equilibrium in an economy.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 200 and 201 or 400, or equivs.

A—Designates a calculus based version which requires Math 132 or 151 or 152 or 153 or 161 or 162 or 263 or H263 or H190, or equiv, or permission of instructor.

### 508\* Comparative Economic Systems U G 5

Principles and institutions for economic decision making under capitalism, socialism, communism, and mixed systems; comparison of selected countries.

4 cl. Prereq: 200 and 201 or 400, or equivs. Not open to students with credit for 690.

### 515 World Economic Development in Historical Perspective I U G 5

First course in a survey of economic development from the middle ages through the 20th century.

Au, Sp Qtrs. 2 2-hr or 4 1-hr cl. Prereq: 200 and 201 or 400, or equivs. GEC historical survey course.

### 516 World Economic Development in Historical Perspective II U G 5

Second course in a survey of economic development from the middle ages through the 20th century.

Su, Au, Wi Qtrs. 2 2-hr or 4 1-hr cl. Prereq: 515. GEC historical survey course.

### 520 Money and Banking U G 5

Organization, operation, and economic significance of our monetary and banking system; special reference to current conditions and problems.

Su, Au, Wi, Sp Qtrs. 4 cl. H520 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 200 and 201 or 400 or equivs.

### 530 Government Finance in the American Economy U G 5

Analysis of fiscal institutions and decision making in the public sector of the American economy; budget planning and execution; taxation, debt, and fiscal policy.

Au, Wi, Sp Qtrs. 4 cl. H530 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 200 and 201 or 400, or equivs.

### 532 Public Expenditure and Cost-Benefit Analysis U G 5

Economics of public choice, public goods, non-market allocations, collective decision-making, and net-benefit maximization; case studies.

4 cl. Prereq: 200 and 201 or 400, or equivs.

### 550 Economic Development U G 5

Empirical and theoretical consideration of long-term economic changes, including changes in industrial structure, technology, and level of national product; emphasis on developing economics.

4 cl. Prereq: 200 and 201 or equivs. Not open to students with credit for 610 or 650.

**556 Cooperation and Conflict in the Global Economy U G 5**

The economic, social, and political bases for and responses to increasing global economic integration.

Sp Qtr. 2 2-hr cl. Prereq: 200 and 201 or 400, or equivs. Not open to students with credit for Int Stds 556. Cross-listed in International Studies.

**560 International Economic Relations U G 5**

Survey of international economic relations; the basis of world trade; commercial and financial policy, particularly of the United States; and recent international economic organization.

4 cl. Prereq: 200 and 201 or 400, or equivs. Not recommended for students who plan to take 665 and 666.

**570 Government and Business U G 5**

Economic and legal aspects of government regulation of business in the United States; philosophies and concepts of public control; contemporary problems.

Au, Wi Qtrs. 4 cl. Prereq: 200 and 201 or 400, or equivs.

**580 Labor Economics and Industrial Relations U G 5**

Survey of the field of labor economics; trade unionism, collective bargaining; wage determination, employment, unemployment; labor legislation.

Au, Wi, Sp Qtrs. 4 cl. H580 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 200 and 201 or 400, or equivs.

**591<sup>A</sup> Economics of Environmental Quality U G 5**

Economic analysis of the relationships among natural resources, growth, pollution control, congestion, and social institutions.

4 cl. Prereq: 200 and 201 or 400, or equivs. Offered in cooperation with Natural Resources.

**H596 Honors Seminar in Economics U 2-3**

Presentations by selected faculty of economic topics and issues of current interest; discussion of research problems and methods.

1 2-hr cl. Prereq: Honors program enrollment or permission of instructor.

**601 Game Theory in Economics U G 5**

Game theory and applications to strategic situations.

2 2-hr cl or 4 cl. Prereq: 501 and Math 132 or 151 or 152 or 153 or 161 or 162 or 263 or H263 or H190, or equiv.

**613 Economic History of the United States U G 5**

General survey from discovery of America to present; European economic background; westward movement and its effects; development of economic institutions in the United States.

Au, Sp Qtrs. 4 cl. Prereq: 444 or 641, or Stat 245, 501 and 502; or grad standing.

**614 Economic History of Western Europe U G 5**

Survey from 1750 through the post-World War II period; from Britain in the West to Russia in the East.

Wi Qtr. 4 cl. Prereq: 444 or 641, or Stat 245, 501 and 502; or grad standing.

**625 National and International Money Markets U G 5**

Organization, functions, and control of money markets and their submarkets; flow of funds in these markets and investment policies of market participants.

4 cl. Prereq: 444 or 641, 501, and 520.

**640 Probability Theory U G 5**

Probability, random variables, Markov chains, discrete and continuous distributions, transformations, moment generating function techniques, limit theorems, expectation, variance.

Au Qtr. 4 cl. Prereq: Math 153 or equiv. Not open to students with credit for Stat 520 or 620.

**641 Applied Regression and Correlation Analysis U G 5**

The general linear regression model; multiple correlation, path analysis, analysis of variance and tests of significance; specification errors.

Wi Qtr. 4 cl. Prereq: 501 and Stat 245 or equivs.

**642 Applied Economic Models and Forecasting U G 5**

Application of economic and statistical principles to economic problems; applications include topics in labor economics, industrial organization, macro models, and international trade.

Sp Qtr. 4 cl. Prereq: 501, 502, 641, and Math 132; or equivs.

**665 International Commodity Flows: Theory and Policy U G 5**

Comparative advantage and the gains from trade; tariffs and other trade restrictions; economic effects of protective policies; U.S. commercial policies; regional economic integration.

4 cl. Prereq: 444 and 501.

**666 Financial Aspects of International Trade U G 5**

International payments and receipts; foreign exchange markets; balance-of-payments adjustment under different monetary systems; macroeconomic policy; international monetary reforms; foreign investments; multinational corporations.

4 cl. Prereq: 444 or 641, and 502.

**670 Structure of Industry U G 5**

Nature, role, and regulation of competition; market structure and social performance; antitrust laws; current economic, legal, and policy problems in the antitrust area.

4 cl. Prereq: 444 or 641, and 501, or grad standing.

**672 Economic Analysis of Japanese Firms and Markets U G 5**

Applications of economic analysis to Japanese industrial organization including the firm's internal incentive structure, labor markets, and financial institutions.

4 cl. Prereq: 200, 201 or 400, and 444 or 641; or equivs. 501 recommended.

**685 Labor Economics U G 5**

Labor demand and supply; wages, unemployment, and inflation; economics of the household's allocation of time.

4 cl. Prereq: 501 or equiv.

**693 Individual Studies U G 1-5**

Advanced readings in economics and related fields.

Su, Au, Wi, Sp Qtrs. Prereq for jrs: An average of B or better in all econ courses taken and a CPHR of 3.00 or above. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694<sup>A</sup> Group Studies U G 3-5**

Advanced courses in economics and related fields.

Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Advanced Mathematical Techniques in Economics G 5**

Advanced mathematical analysis of economics problems; topics to include basic set theory and real analysis; optimization subject to inequality constraints and dynamic optimization.

Au Qtr. 2 1.66-hr cl. Prereq: 600 or equiv. Not open to students with credit for this topic under 894.

**730 Public Finance U G 5**

Comprehensive survey and analysis of the principal fiscal activities of contemporary governments; logic of public sector activity, taxation principles and practice, intergovernmental relations, current fiscal problems.

Wi Qtr. 2 2-hr cl. Prereq: PubPol&M 830, or Econ 501A and grad standing, or permission of instructor. Not open to students with credit for 530 or PubPol&M 730. Cross-listed in Public Policy and Management.

**740 Inference and Decision Analysis G 5**

Distribution theory, point and interval estimation, statistical hypothesis testing, decision analysis under uncertainty.

Wi Qtr. 4 cl. Prereq: 640 or equiv.

**741 General Linear Regression Analysis G 5**

Multiple regression analysis; the general linear model; non-linear and distributed lag models.

Sp Qtr. 4 cl. Prereq: 600 and 740, or Stat 521.

**742 Econometrics G 5**

Review of the general linear model; identification; estimating criteria; single and simultaneous equation estimation; econometric application.

Au, Sp Qtrs. 4 cl. Prereq: 741.

**H783 Honors Research U 3-5**

A program of study arranged for each student, with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the econ courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree with distinction in econ. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**789 Survey Research Practicum G 5**

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

Sp Qtr. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in AED Econ, Agr Educ, Bus-Mktg, Edu P&L, Geog, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, Sociol, or Stat. Cross-listed in AED Econ, Agr Educ, Bus-Mktg, Edu P&L, Geog, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, Sociol, and Stat.

**790 Urban Economics G 5**

Application of economic theory to urban problems; topics include slums, residential segregation, intracity location of economic activity, urban renewal, urban sprawl, transportation, and governmental organization.

Sp Qtr. 4 cl. Prereq: 705, Geog 650, and grad standing; or permission of instructor.

**804 Microeconomic Theory I G 5**

Theories of consumers and producers.

Au Qtr. Prereq: 501A or equiv.

**805 Microeconomic Theory II G 5**

Classical partial equilibrium (competition, monopoly, monopolistic competition, Cournot and Bertrand oligopoly models, location models) and general equilibrium theory.

Wi Qtr. Prereq: 600 and 804.

**806 Macroeconomic Theory I G 5**

Theory of income and employment; Keynesian aggregate supply and demand; consumption, saving, and the multiplier; determinants of investment and the accelerator; government's role.

Au Qtr. Prereq: 502A or equiv.

**807 Macroeconomic Theory II G 5**

Aggregate supply: expectations, introduction to dynamic macroeconomic models.

Wi Qtr. Prereq: 600, 804, and 806. Not open to students with credit for 809.01.

**808 Microeconomic Theory III G 5**

Partial equilibrium welfare theory; economic dynamics; economics of information and uncertainty; and elementary game theory; may also include topics in industrial organization, labor, public finance, and others.

Sp Qtr. Prereq: 805.

**809 Macroeconomic Theory III G 5**

Stochastic dynamic problems in macroeconomics; questions of growth, business cycles, and policy.

Sp Qtr. Prereq: 807. Not open to students with credit for 809.02.

**811 Applied Macroeconomics G 5**

Application of econometric methods to theoretical structures developed in 806 and 809; estimation and validation of macroeconomic models.

Sp Qtr. 2 2.75-hr cl. Prereq: 742 and 809, or permission of instructor.

**815\* Mathematical Economics I G 5**

Mathematical analysis of microeconomic problems including consumer and production theory and general equilibrium.

Prereq: 808.

**816\* Mathematical Economics II G 5**

Mathematical analysis of macroeconomic problems including static and dynamic systems and optimal control.

Prereq: 809.

**818 Economics of Information G 5**

How information affects economic decision making in strategic settings and on markets; topics include theories of speculation, rational expectations, signaling principal-agent models, and search.

Au Qtr. 2 1.66-hr cl. Prereq: 804, 805, 808. Not open to students with credit for this topic under 894.

**820 Monetary Theory G 5**

Role of money in theoretical analysis of forces determining and influencing level of income, employment, and prices.

Au Qtr. Prereq: 520, 805, and 806; or equivs.

**830 Advanced Public Finance I G 5**

A theoretical and empirical investigation of the economic behavior of the public sector; theory of social goods, problems of tax structure, incidence, multi-unit finance.

Au Qtr. Prereq: 805.

**832 Advanced Public Finance II G 5**

Continuation of 830; topics include intergovernmental relations, tax incidence, and tax reform.

Wi Qtr. Prereq: 830.

**840 Time-Series Econometrics G 5**

Fundamental elements of time series methods; recently developed techniques for the analysis of economic time series.

Au Qtr. 2 2-hr cl. Prereq: 742.

**842 Advanced Econometrics G 5**

Theory and application of advanced quantitative research methods; computerized application of econometric methods developed in 742.

Wi Qtr. Prereq: 742.

**861 Advanced Microeconomic Trade Theory G 5**

Advanced nonmonetary international trade theory; analysis of the effect of trade and commercial policies on the allocation of resources, income distribution, and growth.

Au Qtr. 4 cl. Prereq: 805.

**862 Advanced Macroeconomic Trade Theory G 5**

Advanced monetary international trade theory; analysis of payments adjustments under alternative international monetary institutions.

Wi Qtr. Prereq: 805 and 806; 861 recommended.

**863 Economic Growth and International Trade G 5**

Evolution of the world economy, from theoretical and empirical perspectives, including Solow growth models, optimal economic growth, models of overlapping generations, and endogenous economic growth.

Sp Qtr. 2 2-hr cl. Prereq: 808.

**871 Industrial Organization I G 5**

An investigation of information economics and market-based transactions in the theory of the firm.

Wi Qtr. 2 2-hr cl. Prereq: 808.

**872 Industrial Organization II G 5**

Economic analysis of industry structure, conduct, performance, and related issues of public policy.

Sp Qtr. Prereq: 808 and 871.

**883 Advanced Labor Economics I G 5**

The firm as production function, employment contracting in a competitive market, and collective action (labor unions and employment contracting).

Au Qtr. Prereq: 805 and 806.

**884 Advanced Economics of the Labor Market G 5**

Economic theory and empirical evidence relating to labor allocation and wage determination.

Wi Qtr. Prereq: 805 and 806.

**893 Individual Studies G 1-15**

Advanced readings in economics and related fields.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

**894 Group Studies G 3-5**

Advanced courses in economics and related fields.

Su, Au, Wi, Sp Qtrs. Repeatable.

**901 Supervised Teaching in Economics G 5**

Supervised teaching of undergraduate courses in economics for students pursuing the Doctor of Arts degree.

Au Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**915 Seminar in Price Theory G 5**

Special topics in economic theory.

Au, Sp Qtrs. Prereq: 808 and 809. Repeatable to a maximum of 30 cr hrs.

**920 Seminar in Monetary Policy G 5**

Application of monetary theory to issues of public policy in banking and monetary affairs; examination of public hearings and policy literature.

Au, Sp Qtrs. Prereq: 820 and 821. Repeatable to a maximum of 30 cr hrs.

**940 Seminar in Econometrics G 5**

Examination of economic problems whose solutions may advantageously be sought by use of the methods of mathematics and mathematical statistics.

Au, Sp Qtrs. Prereq: 742 and 842 or equiv or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**970 Seminar in Structure and Regulation of Industry G 5**

Economic bases for government participation in business activities: antitrust, regulation, and collective decision making.

Au, Sp Qtrs. Prereq: 872. Repeatable to a maximum of 30 cr hrs.

**981 Seminar in the Economics of the Labor Market G 5**

Selected topics and issues in wage determination, employment, and unemployment.

Sp Qtr. Prereq: 884. Repeatable to a maximum of 10 cr hrs.

**999 Research in Economics: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Education

292-2581

Education Minor

Undergraduate students wishing to explore the field of Education should contact an advisor in the Colleges of the Arts and Sciences for specific information.

Although all prerequisites and exclusions may not be listed, they are still in effect and will be enforced, (i.e. students who have taken a course with a different prefix, prior to College restructuring, cannot receive credit for the same course, even though the course may have a new prefix and be located in a different academic unit. Prerequisites will have new prefixes and/or new numbers, but will be enforced. If you are unsure, please contact the college.

**289 Field Experience: Tutoring U 2-5**

Professional service with children or youth in some school or community agency.

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**494 Group Studies U 1-5**

Group studies on special issues in education.

Su, Au, Wi, Sp Qtrs. Arr depending upon number of hrs 1-5. Repeatable to a maximum of 20 cr hrs.

**692 Workshop U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**693 Individual Studies U G 1-4**

Individual study in the field of education.

Su, Au, Wi, Sp Qtrs. Arr according to number of hrs 1-4. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727 Special Topics in Education P G 1-5**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or registration in one of the professional schools. Repeatable. This course is graded S/U.

## Education: Educational Policy and Leadership

Office of Student Services, 688-4007

122 Ramseyer Hall, 29 West Woodruff

Although all prerequisites and exclusions may not be listed, they are still in effect and will be enforced, (i.e. students who have taken a course with a different prefix, prior to College restructuring, cannot receive credit for the same course, even though the course may have a new prefix and be located in a different academic unit. Prerequisites will have new prefixes and/or new numbers, but will be enforced. If you are unsure, please contact the Office of Student Services listed above.)

Notice: All courses may not appear in this listing. (For a complete listing of courses, please contact the Office of Student Services listed above.)

Cultural Studies in Education, 688-5590

260, 370, 600, 610, 615, 622, 624, 626.01, 626.02, 626.03, 650.01, 650.02, 650.03, 650.04, 658, 676, 677, 678, 692.46, 692.49, 693.40, 693.46, 693.49, 694.40, 694.46, 694.49, 704, 705, 706, 706.01, 706.05, 727.40, 727.46, 727.49, 730, 778, 791, 798, 800, 812, 817, 819, 822, 823, 824, 825, 826, 829, 830, 831, 832, 833, 834, 839, 849, 851, 852, 853, 855, 860, 863, 864, 865, 869, 871, 872, 884.40, 884.46, 884.49, 893.40, 893.46, 893.49, 894.40, 894.46, 894.49, 897, 904, 905, 906, 907, 908, 925.40, 925.46, 925.49, 927, 966, 999.40, 999.46, 999.49.

Educational Administration and Higher Education, 292-7700

270.01, 270.04, 271, 692.30, 692.32, 692.44, 693.30, 693.32, 693.44, 694.30, 694.32, 694.44, 707, 708, 723, 726, 727.30, 727.32, 727.44, 780, 782, 806, 813, 815, 820, 835, 840, 841, 842, 843, 844, 845, 846, 847, 858,

861, 866, 870, 884.30, 884.32, 884.44, 887, 888, 893.30, 893.32, 893.44, 894.30, 894.32, 894.44, 899, 910, 912, 913, 914, 915, 916, 925.30, 925.32, 925.44, 926, 930, 943, 945, 946, 947, 949, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 971, 999.30, 999.32, 999.44.

General Professional Studies, 292-4872

259, 450, 451, 650.01, 650.02, 650.03, 650.04, 671, 683, 692.46, 692.49, 692.50, 693.036, 693.40, 693.46, 693.49, 693.50, 694.36, 694.40, 694.46, 694.49, 694.50, 700.01, 700.02, 700.03, 700.04, 700.05, 700.06, 700.07, 701, 702, 717, 718, 722, 723, 726, 727.40, 727.46, 727.49, 727.50, 756, 768, 801, 802, 803, 804, 805, 811, 812, 816, 818, 821, 828, 841, 851, 859, 860, 862, 863, 865, 868, 869, 873, 880, 884.46, 884.49, 884.50, 889, 890, 901, 903, 893.36, 893.40, 893.46, 893.49, 893.50, 894.36, 894.40, 894.46, 894.49, 902, 924, 925.36, 925.40, 925.46, 925.49, 925.50, 927, 928, 929, 932, 937, 999.36, 999.40, 999.46, 999.49, 999.50

Quantitative Research, Evaluation and Measurement in Education, 292-3229

692.60, 693.60, 694.60, 727.60, 744, 745, 765, 785, 786, 795, 796, 807, 808, 809, 810, 836, 837, 838, 850, 854, 867, 874, 878, 884.60, 893.60, 894.60, 925.60, 931, 966, 999.60.

Undergraduate Minor in Education

305, 306, 307, 309, 311, 411, 413, 414.

**259 Individual Learning and Motivation: Strategies for Success in College U 5**

Examines theory and practice about learning strategies, motivation and thinking. Focus on application of learning strategies to success in college.

Au, Wi, Sp Qtrs. 4 1-hr 10 min cl.

**260 Sport in Contemporary America U 3**

A study of the contemporary sport scene in America; the issues, the controversies confronting the athlete, the coach, the administrator, and the general public.

1 1.5-hr cl; 1 1.5-hr rec.

**270 Seminars in Career and Self Development**

Examination of self in relation to educational and career goals; self assessment, decision making, identification, and use of campus resources, employability, and work adjustment skills.

Au, Wi, Sp Qtrs. 1 2.5-hr cl.

**270.01 Self-Career Development U 3**

Designed to provide opportunities for self-exploration and skill development; exploration of and clarification of vocational and educational interests.

This course is graded S/U.

**270.04 Career Development and Leadership Training in Higher Education U 3**

Designed to explore possible careers in higher education and to conduct leadership training in terms of higher educational functions and organizations.

This course is graded S/U.

**271 Introduction to Service and Community Leadership U 3**

Introduction to the knowledge, skills, and competencies for responsible service and leadership in diverse communities. Prepares students for engaged, responsible, and active community involvement and leadership.

Au Qtr. 2 1.5-hr cl. Repeatable to a maximum of 6 cr hrs. Off-campus field experience required for minimum of 3 hrs week for 8 weeks.

**305 Childhoods in Historical and Comparative Perspective U 5**

Comparative and historical study of the childhood experience.

2 2.5-hr cl.

**306 School and Society U 5**

Use of concepts and methods of history, philosophy, and the social sciences to grasp the interrelationship between society and education.

5 cl, arr.

**307 History of American Education U 5**

Designed to develop a more thorough and systematic understanding of education and schooling in the United States.

Au Qtr.

**309 Psychological Perspectives on Education U 5**

Examination of research, theory, and practice pertaining to important aspects of learning and teaching; the nature of learners, cognition, problem solving, motivation, teaching approaches, and assessment.

2 2-hr cl, 1 rec.

**311 Impact of Technology in Learning and Education U 5**

The theories, function, impact, and use of technology in formal and informal learning and education environments.

2 2-hr cl, 1 rec, lab arr.

**370 Computers in the Classroom: An Introduction U 3**

An introduction to educational computing.

2 cl, 4 hrs lab. Not open to students with credit for Ed-P&L 671.

**411 Body/Mind Goes to School U 5**

Current and emerging theoretical and cultural conception of body and mind and how they affect educational theories and practices.

2 1-hr cl, 2 1.5-hr labs.

**413 Legal Issues in Education U 5**

An exploration of legislative, executive and judicial action pertaining to activities in education.

2 2-hr cl, 1 rec.

**414 Gender Education U 5**

Examination of the education of females in schools through the lenses of history, psychology, sociology, policy analysis, and curriculum.

1 2-hr cl, 2 1.5-hr rec.

**600 Basic Media Skills U G 1**

Self-instructional modules and activities emphasizing the selection, utilization, and preparation of teaching material.

3 hrs lab. Prereq: Admission to a teacher education program certification area or permission of instructor. Not open to students with credit for Ed-T&P 600. Cost of production materials must be borne by the student. This course is graded S/U.

**609 Teaching as a Profession U G 3**

Examines complexities surrounding the practice of teaching at national, state and local levels, highlighting legal, professional, and ethical issues surrounding American schools and teaching.

Au Qtr. 1 2.5-hr cl. Part of a prescribed series of courses leading to teacher licensure in Early Childhood, Middle Childhood and Young Adult Education.

**610\* Women's Sport History U G 4**

Examines women's sporting experiences from primitive cultures to contemporary societies; investigates influence of class, economics, power relationships, education, and views of the body.

4 cl.

**615 Developing Discipline for Effective Learning U G 3-5**

Causes of and procedures for dealing with school discipline problems; focus upon the teacher, student, classroom, and school situations.

1 2.5-hr cl, arranged practicum. Prereq: teaching experience or enrolled in student teaching.

**622 History of Physical Education and Sports from Ancient Times to 19th-Century Europe U G 3**

A history of physical education and sports which includes primitive societies, Greek and Roman civilizations, the medieval period, and European countries in the 18th and 19th centuries.

3 1-hr cl.

**626 Sport and Popular Culture Series**

A variety of themes present in selected popular cultural forms dealing with a variety of sports such as football, basketball, baseball, and track and field.

1 1-hr cl, 1 2-hr cl. Cross-listed with Edu PAES.

**626.01 Sport and Popular Culture Overview U G 3****626.02 Sport and Popular Culture - Race and Gender U G 3**

Prereq: 626.01 or permission of instructor.

**626.03\* Sport and Popular Culture - Baseball U G 3**

Focus on baseball as it has appeared in film and literature of and about the early 1900's to the present day.

Prereq: 626.01 or permission of instructor.

**650 Humanistic Foundations of Education**

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 3rd yr standing in a recognized university teacher education program, or grad standing, or permission of dept office.

**650.01 Philosophy of Education U G 3**

Designed to provide students with an application of philosophy of education to issues and problems of teaching and living in a culturally diverse society.

**650.02 History of Modern Education U G 3**

Education and schools as factors in the development of the modern world; theories, practice, relations with other social institutions and forces, especially in Europe and America.

**650.03 Applied Ethics for Teachers U G 3**

An examination of selected moral/ethical issues which face practicing educators; emphasis on developing ethical decision-making skills.

**650.04 Social Criticism in American Education U G 3**

Analysis and interpretation of critical stances taken by selected major writers on educational topics of current interest.

**658 Sport in Western Culture U G 3**

Examines sport in North American, South American, and European countries with emphasis on influences of political ideology, economics, gender, race, and nationalism.

3 1-hr cl.

**671 Fundamentals of Computer Applications in Education and Training U G 4**

An introduction to the common uses of computers in educational and training settings; emphasis on instruction and management.

1 2-hr cl, 4 hrs lab, 2 hrs arr. Not open to students with credit for Ed-P&L 370. Open only to professional educators.

**676 Planning and Preparing Teacher-Made Educational Media U G 3**

Demonstration and practice in the preparation of teaching materials using desktop publishing; emphasis on the development of fliers, worksheets, overheads, and simple animations.

1 2-hr cl, 1 2-hr lab. Prereq: 4th yr or grad standing.

**677 Educational Telecommunications U G 3**

The varied types of educational telecommunications in relation to designs, planning, production, utilization, and evaluation.

Prereq: 4th yr standing.

**678 Introduction to Instructional Systems Development U G 3**

Paradigms for instructional development; learner, task, and curriculum analysis; prototype development; completion of a production proposal/storyboard; subsequent enrollment in 778 expected.

1 2-hr cl, 1 2-hr lab. Prereq: 675.

**680 Educational Videography U G 4**

Functions and operations of small format video production and post-production equipment; application of theory and research to the production of video materials for instruction.

2.5-hr cl, 2.5-hr lab, arr. Prereq: 677 and 678 recommended.

**681 An Historical Account of the Education of Black Folk in the US, Part I: 1700-1950 U 3**

Examines the tradition of Black education and the implications of this tradition for educators and future generations of students.

Au Qtr. 2 1.5-hr cl. Prereq: Jr or sr standing.

**682 An Historical Account of the Education of Black Folk in the US, Part II: 1950-Present U 3**

Designed to provide students with a perspective on historical and contemporary Black education through the writings of Black scholars.

Wi Qtr. 2 1.5-hr cl. Prereq: Jr or sr standing.

**683 Solving Classroom Problems U G 3**

Exploration of problem areas of classroom control, student learning, parent relationships, relationships with other teachers, and time management.

1 2.5-hr cl. Prereq: Student teaching or permission of instructor.

**692 Workshops**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**692.10 Educational Policy and Leadership U G 1-8**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**692.30 Educational Administration U G 1-8**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**692.32 Higher Education U G 1-8**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**692.44 Educational Administration and Supervision U G 1-8**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**692.46 Instructional Design Workshop U G 1-8**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**692.49 Curriculum and Instruction U G 1-8**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**692.50 General Professional Studies U G 1-8**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**692.60 Quantitative Research, Evaluation and Measurement in Education U G 1-8**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**693 Individual Studies**

Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30 cr hrs for the doctoral degree.

**693.10 Educational Policy and Leadership U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.30 Educational Administration U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.32 Higher Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.36 Teacher Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.40 History of Education and Comparative Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.44 Educational Administration and Supervision U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.46 Instructional Design U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.49 Curriculum and Instruction U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.50 General Professional Studies U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.60 Quantitative Research, Evaluation and Measurement in Education U G 1-4,**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies**

Group studies on special problems in education.

Prereq: Permission of instructor.

**694.10 Educational Policy and Leadership U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.30 Educational Administration U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.32 GROUP STUDIES: HIGHER EDUCATION U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.36 Teacher Education U G 1-4**

Repeatable to a maximum of 20 cr hrs.

**694.40 History of Education and Comparative Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.44 Educational Administration and Supervision U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.46 Instructional Design U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.49 Curriculum and Instruction U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.50 General Professional Studies U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.60 Quantitative Research, Evaluation and Measurement in Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-5**

Repeatable.

**698.02 Foreign U G 1-5**

Repeatable.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in Edu P&L, Edu PAES, Edu T&L. Repeatable to a maximum of 9 cr hrs; subdivisions not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs.

**700.01 Seminar on Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

Repeatable to a maximum of 9 cr hrs.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumer/clients/ patients.

Repeatable to a maximum of 9 cr hrs.

**700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3**

Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.

Repeatable to a maximum of 9 cr hrs.

**700.04 Interprofessional Practicum in Clinical Settings U G 3,5**

Interprofessional teamwork in clinical settings.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

Repeatable to a maximum of 9 cr hrs.

**700.07 Interprofessional Approaches to Child Abuse and Neglect U G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

1 2.5-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster. Repeatable to a maximum of 9 cr hrs.

**701 Logic in Teaching U G 3**

Study of the logical aspects of teaching; includes attention to definitions, arguments, explanations, questions, and value judgments.

2 1.5-hr cl. Prereq: 650.01 and 4th yr standing.

**702 Modern Trends in Educational Philosophy U G 3**

A study of contemporary work in philosophy of education and applications of that work to educational practice.

1 2.5-hr cl.

**704 American Sport History U G 5**

Examines intersection of sport and society in America. Investigates influence of city, modernization, race, class, gender, consumer society, media on sporting structures, attitudes, and meaning.

Sp Qtr. 2 2-hr cl, 1 hr arr.

**705 Education and Spirituality: Holistic Perspectives U G 3**

Examination of emerging themes and theories of spirit and spirituality in curriculum thought and educational practice, including cross-cultural, feminist, ecological, and postmodern perspectives.

Au Qtr. 1 3-hr cl.

**706 Somatic Studies**

A series of courses focusing on mind/body integration issues and the meaning of the movement experience in education and the culture at large.

**706.01 Experiencing Somatic through Movement Theory and Practice U G 3**

Considerations of the moving person through elementary description, analysis, posture, style, and technique.

2 1.5-hr cl, 1 hr arr. Not open to students with credit for 230.

**706.02\* Movement, Observation, Description and Somatic Awareness U G 3**

The use of the effort/space vocabulary and its relationship to movement observing description and somatic awareness.

Sp Qtr. 1 2.5-hr cl. Prereq: 230 or equiv. Not open to students with credit for 430.

**706.03 Conceptions of the Body in Western Culture U G 5**

Traditional concepts of the body, which have influenced contemporary educational theory and practice.

2 2-hr cl, 1 hr arr.

**706.04 Human Movement Theory G 3**

Study of several theoretical considerations of human movement and their implications for eastern and western cultural movement forms.

2 1.5-hr cl.

**706.05\* Eastern Movement Forms: Cross Cultural Implications U G 3**

Examination of the theoretical foundations upon which Eastern movement and martial art forms are based. Practice opportunities in one or more of these forms are scheduled.

Sp Qtr. 1 2.5-hr cl.

**707 Applied Technology in Educational Administration G 3**

Develops skills and knowledge in the application of technology to administrative practice in educational organizations. Hands-on instruction in Macintosh computer lab. Computer applications covered include word processing, databases, spreadsheets, communications, web-browsers, graphics and presentation software.

Sp Qtr. 1 2.5-hr cl, lab.

**708 Administering Service-Learning Programs G 3**

Provides knowledge, skills, and competencies for leading, directing, and administering service-learning programs.  
Sp Qtr. 1 2.5-hr cl.

**717 Comparative Education U G 3**

Social and cultural factors influencing the differential development of educational institutions and organization.  
1 2.5-hr cl. Prereq: 4th yr standing.

**718 Pedagogical Studies G 3**

Key research studies and major perspectives on classroom pedagogy including effective classroom management, teaching and learning, and school functioning.

Au Qtr. 1 2.5-hr cl. Prereq: Ed-T&L 702 and 704. Open to students enrolled in the MEd program.

**722 Studies in the History of Educational Policy U G 3**

Historical analysis of social, economic, and political factors shaping public school policy in the US since 1800.  
1 2.5-hr cl. Prereq: 4th yr standing.

**723 Individual Development in Educational Change U G 3**

Developmental processes of individuals are examined and related to processes of educational development, with special attention given to the nature of self-development, interpersonal communications and creative behavior.

1 3-hr cl. This course is graded S/U.

**726 Educational Change U G 3,5**

Commonly used strategies for changing people and organizations are studied; the strategies vary from collaborative problem solving to the coercive use of violence and non-violence.

1 3-hr cl.

**727 Special Topics in Education**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Prereq: Grad standing or registration in one of the professional schools. Special Topics in Education (Edu-P&L 727) may be offered by any of the program areas listed below.

**727.10 Educational Policy and Leadership P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.30 Educational Administration P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.32 Higher Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.36 Teacher Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.40 History of Education and Comparative Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.44 Educational Administration and Supervision P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.46 Instructional Design P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.49 Curriculum, Instruction, and Professional Development P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.50 General Professional Studies P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.60 Quantitative Research, Evaluation and Measurement in Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**730 Philosophical Perspectives of Sport and Leisure U G 5**

Examination of philosophical sport and leisure scholarship with emphasis on contemporary theoretical literature and issues.

2 2-hr cl and 1-hr arr. Required of grad students in the socio-cultural studies area of concentration.

**744 Assessment for Classroom Teachers G 2-4**

Concepts and practical experience in student assessment with optional clinical work.

2 1-hr cl for 2 cr hrs, 20 hrs of clinical experience in public schools for each additional cr hr. Prereq: Grad standing and enrollment in a teacher education program. Not open to students with credit in ED S&R 744. Repeatable to a maximum of 4 cr hrs.

**745 The Inquiry Process - The Classroom Teacher as an Inquirer and Consumer of Research G 2-4**

Approaches to educational research with critical review of research studies and their relationship to practice.

2 1-hr cl for 2 cr hrs, 20 hrs of clinical experience in public schools for each additional cr hr. Prereq: Grad standing and enrollment in a teacher education program. Not open to students with credit in ED S&R 745. Repeatable to a maximum of 4 cr hrs.

**750 Educators and the Arts**

A series of courses for educators emphasizing professional development and aesthetic literacy through encounters with artists and the arts.

Open to jr and sr undergrad students by permission of instructor. Does not substitute for Art Educ 600. Repeatable to a maximum of 15 cr hrs, each subdivision repeatable to 9 cr hrs. Classes meet at Grandview HS and arranged visits to art galleries, museums, and artists studios, except for 750.04 (Summer Qtr) which meets at the Wexner Center.

**750.02 The Literary Arts U G 3**

Experiencing the literary arts through encounters with a variety of it's art forms and through dialogue with literary artists, readings, lectures and discussions.

Wi Qtr. 1 2.5-hr cl. Repeatable to a maximum of 9 cr hrs. Class meets at Grandview HS and arranged visits to art galleries, museums, and artists studios. This course is graded S/U.

**750.03 The Performing Arts U G 3**

Experiencing performances in dance, music, theatre, and encounters and dialogue with performing artists, composers, choreographers, and directors.

Sp Qtr. 1 2.5-hr cl. Repeatable to a maximum of 9 cr hrs. Class meets at Grandview HS and arranged visits to art galleries, museums, and artists studios. This course is graded S/U.

**756 Inservice Education of Teachers G 3**

An overview of the goals, problems, practices, issues, research, theory, organizations, and literature of inservice education for teachers.

1 3-hr cl.

**765 Introduction to Educational Evaluation U G 3**

Introduction to educational evaluation including history, models, theories, politics of evaluation, and types of evaluation.

1 2.5-hr cl. Prereq: 785 and/or permission of instructor. Not open to students with credit for Ed-T&P 765 and ED S&R 765.

**768 Directing Student Teachers U G 3**

Principles and techniques for directing the laboratory experiences of student teachers and other teacher education students.

1 2.5-hr cl. Prereq: experience.

**775 Foundations of Librarianship for Educators U G 3**

Critical examination of libraries and the role of librarians in contemporary society, emphasizing their function in education.

1 3-hr cl.

**778 Formative Evaluation of Instructional Systems U G 3**

Theory and practice of developmental testing and field evaluation of instructional systems.

Wi Qtr. 1 3-hr cl. Prereq: 678 and course(s) in media production resulting in a prototype instructional system.

**779 Development and Management of Educational Media Centers G 3**

Media specialist's responsibilities for the successful operations of a media program; planning, organization, administration, and service functions; emphasis on school library media programs.

Prereq: 675 or equiv.

**780 Introduction to Student Affairs U G 3**

The nature of and issues involved in the work of student affairs in higher education.

Au Qtr. 2 1.5-hr cl.

**782 Practice of College Student Development G 3**

First practical course in professional sequence; prerequisite to field work; major college student development practices are examined; research on practitioners' projects are examined.

Au Qtr. 2 1.5-hr cl.

**785 Introduction to Inquiry, Principles, Strategies, and Techniques U G 3**

Introduction to inquiry strategies and their role in educational development; emphasis is on the conceptualization of educational problems.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 4th year or grad standing. Not open to students with credit for Ed S&R 785.

**786 Introduction to Inquiry: Quantitative Methods U G 3**

An introduction to quantitative techniques, with emphasis on application in educational settings.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 4th year or grad standing. Not open to students with credit for Ed-S&R 786.



**788 Computer Concepts and Skills for Educators**

Practical in using various programming languages and common microcomputing operating systems.

Prereq: Cptr/Inf 548, Ed-P&L 671, or permission of instructor.

**788.01 PILOT Authoring Language U G 5**

Systematic exploration of instructional and educational problems for which interactive, instructional courseware can provide powerful solutions; practical experience in using the PILOT authoring system to address those problems.

2 cl, 8 hrs lab. Prereq: Cptr/Inf 548, or Ed-P&L 678, or permission of instructor.

**791 Media and Technology in Education G 4**

Overview of the impact and use of media and technology in education; courses directed to teacher education students.

2 hr lecture, 2 2-hr labs. Repeatable to a maximum of 4 or hrs.

**795 Proposal Development U G 3**

Principles, processes, and research relating to the creation of proposals for developmental and research activities in educational agencies and institutions.

1 2.5-hr cl. Prereq: 785 or equiv. Not open to students with credit for Ed-T&P 795 or ED S&R 795.

**796 Classroom Test Construction U G 3**

General principles and techniques for construction and utilization of classroom tests for assessment of student achievement.

1 3-hr cl. Prereq: 786 or equiv or permission of instructor. Not open to students with credit for Ed-T&P 787 or ED S&R 796.

**798 Qualitative Research for Educators G 3**

An introduction to qualitative research at the Master's level, this course offers an introduction to the history and substantive topics of educational ethnography.

Su, Au, Wi, Sp Qtrs. 1 2.5-hr cl.

**800 Qualitative Research in Education G 3**

Issues and problems of scientific inquiry in educational research with emphasis on field research.

Au, Wi Qtrs. 1 3-hr cl.

**801 Comparative Perspectives on Education and Community Violence G 3**

Cross-cultural and theoretical perspectives of impact of violence on children. Explores intervention strategies.

Wi Qtr. 1 2.5-hr cl.

**802 Comparative Perspectives on Education and Democratization G 3**

Cross-cultural and theoretical perspectives on the relationship between education and democratization.

Sp Qtr. 1 2.5-hr cl.

**803 Psychological Perspectives on Teachers, Teaching and Teacher Education G 4**

Psychological research (including quantitative and qualitative studies) on teaching; teacher characteristics, knowledge and beliefs; learning to teach; and the role of educational psychology in teacher education.

Sp Qtr. 1 3-hr cl, arr lab. Prereq: Permission of instructor.

**804 Technology in Education Network (TIENET) Forum: Application of Technology to Engaged Life-Long Learning G 4**

Explores integration of technology in the curriculum.

Au, Wi, Sp Qtrs. 1 2.5-hr cl, 4 hrs lab, arr field trips. Prereq: 671 or equiv; teaching experience. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

**805 Education in Developing Societies G 3**

Comparative examination of the social and cultural contours of education in developing societies, and the contrast between educational problems in these societies and the industrial world.

Sp Qtr. 1 2.5-hr cl.

**806 Administration of Higher Education G 3**

Purposes and scope of higher education; governance; problems of administration-student-staff relationships; and administrative organization.

1 2.5-hr cl or 2 1.5-hr cl. Not open to students with credit for Ed-Admin 800.

**807 Educational Survey Research Methods G 3**

A study of the design principles, sampling, and data-gathering methods used in the conduct of educational survey research.

2 1.5-hr cl. Prereq: 785 or Ed-T&P 785, and 786 or Ed-T&P 786 or equivs with written permission of instructor. Not open to students with credit for Ed-T&P 807 or ED S&R 807.

**808 Experimental Design in Education I G 3**

An examination of logical and quantitative principles, especially the analysis of variance, underlying basic experimental designs employed in educational research.

Au Qtr. 2 1.5-hr cl. Prereq: 786 or Ed-T&P 786 or equiv. Not open to students with credit for students with credit for Ed-T&P 808 or ED S&R 808.

**809 Experimental Design in Education II G 3**

An examination of intermediate quantitative principles and issues underlying experimental design in education, especially principles and issues associated with factorial designs employing multiple response measures.

Wi Qtr. 2 1.5-hr cl. Prereq: 808 or Ed-T&P 808 or equiv. Not open to students with credit for Ed-T&P 809 or ED S&R 809.

**810 Experimental Design in Education III G 3**

An examination of repeated measurements, mixed, hierarchical, partial hierarchical, and quasi-experimental designs and associated methods of univariate and multivariate statistical analyses.

Sp Qtr. 2 1.5-hr cl. Prereq: 809 or Ed-T&P 809 or equiv. Not open to students with credit for Ed-T&P 810 or ED S&R 810.

**811 Sources of Progressive Thought in American Education G 3**

An examination of the ideas that provided the philosophical basis for progressive education with an emphasis on the historical context in which these ideas were developed.

1 3-hr cl.

**812 American Schools and American Society G 3**

Education and schooling in the United States.

1 2.5-hr cl. Prereq: Grad standing.

**813 Understanding Educational Organizations: G 3**

An introductory survey of the applications of formal organization theory for the purpose of understanding educational organizations-a core course in administrator certification.

1 2.5-hr cl or 2 1.5-hr cl. Certification students must also enroll for 1 hr in 884B44.

**814 Historical Bases of Curriculum Development G 3**

Intensive analysis of the outstanding contributions made by scholars in the field from 1900 to 1960.

Prereq: 860.

**815 The Community College G 3**

History of community colleges; evaluation of organization and administration; campus planning; and federal, state, and local governmental relations with these colleges.

1 2.5-hr cl.

**816 Contemporary Research and Issues in Teacher Thinking, Curriculum, and Educational Technology G 4**

Surveys research about teacher thinking, curriculum, and educational technology and explores issues related to it and its implications.

Wi Qtr. 2 2-hr cl.

**817 Qualitative Research: The Analysis of Interaction in Educational Settings**

Qualitative research and the analysis of interaction in educational studies via the history and practices of educational ethnography, fieldwork, and analysis of discourse.

1 2.5-hr cl.

**817.01 Qualitative Research: Introduction to the Analysis of Interaction in Educational Settings G 3**

As the first course of the 817 sequence, this course offers an introduction to the intellectual history of qualitative research and the analysis of interaction.

Au, Wi Qtrs.

**817.02 Analysis of Classroom Discourse G 3**

An introduction to the analysis of the discourse structures of the classroom, this course addresses the face-to-face organization of classroom order, interaction and instruction.

Wi Qtr. Prereq: 817.01 or permission of instructor. Not open to students with credit for 817.

**817.03 Advanced Topics in the Analysis of Interaction in Education G 3**

An advanced course in the analysis of interaction in classroom and instructional contexts, bringing to bear literature in analysis of discourse and situated action.

Wi, Sp Qtrs. Prereq: 817.01, 817.02; or permission of instructor.

**818 Contemporary Perspectives on Instruction G 3**

Overview of the research basis of classroom instruction, both historical and contemporary; the conceptual framework used, the paradigm used, questions explored, variables studied, and findings will be examined.

1 2.5-hr cl.

**819 Professional Sport in 20th-Century America G 3**

Examination of the development of professional sport; its economic structure and relationship to mass media; the nature and problems of professional athletes.

2 1.5-hr cl. Prereq: Enrollment in Sports Management Program, or permission of instructor.

**820 Financing Higher Education G 3**

A study of financing higher education with emphasis on issues affecting higher education; criteria for identifying and developing sources of financial support for institutions of higher education.

1 2.5-hr cl or 2 1.5-hr cl. Prereq: 806 or 815.

**821 Comparative Perspectives on Education in Latin America G 3**

Comparative examination of the social and cultural contours of education through Latin America.

Wi Qtr. 1 2.5-hr cl.

**822 Cultural Studies in Education G 3**

Examines how cultural studies frames questions and themes pertinent to the study of education, technology, inquiry, sport, and the body.

Au Qtr. 1 3-hr cl.

**823 The Functions of the Computer in the Classroom G 3**

A critical examination of the issues raised by the implementation and use of microcomputers in schools.

Au, Sp Qtrs. 3 cl.

**824 Educational Policy Analysis in Contemporary Culture G 5**

An exploration of traditional and emerging approaches to policy analysis in education.

Wi Qtr. 2 2-hr cl.

**825 Visualizing the Curriculum G 3**

Investigates questions relating to visual literacy with emphasis on the design and use of images in educational settings.

Sp Qtr. 1 2.5-hr cl.

**826 Cultural Diversity, Equity, and School Reform G 3**

Examination of intersections of cultural diversity, equity and school reform.

Su Qtr. 1 2.5-hr cl.

**827 Analyzing Categorical Data in Educational Research G 3**

An introduction to the use of log-linear models and related statistical techniques for the purpose of analyzing multidimensional contingency tables and categorical response.

Wi Qtr. 1 2.5-hr cl. Prereq: 808 or Ed-S&R 808 or equiv.

**828 Ethical Problems in Education G 3**

An examination of theories of value in education which focuses on the philosophical problems of formulating and defending moral judgements.

1 2.5-hr cl.

**829 Technology, Society, and Schools G 3**

Examination of theories and history of interaction of society and technology with implications for instructional technology and schooling. Resources for constructing personal definitions of technology.

Su Qtr. 1 3-hr cl.

**830 Critical Issues in Global Education G 3**

Examines pedagogy for global perspectives in teaching about cultures, global inequalities, advocacy, positionality, privilege, marginalization and resistance to oppression.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl.

**831 Integrating Multicultural and Global Education G 3**

Alternative conceptual and programmatic approaches to the integration of multicultural and global education.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl.

**833 The Politics of Curriculum Knowledge: Critical Issues in Curriculum G 3**

Examination of how politics, ideology, economics and cultural perspectives impact on curricular knowledge.

Wi Qtr. 1 2.5-hr cl.

**834 An Interpretative History of African American Education 1950 to 1990 G 3**

Examination of African American education from the perspective of African American scholars from the 1950s to the 1990s.

Au Qtr. 1 2.5-hr cl.

**835 Personnel Administration in Higher Education G 3**

A study of the staff personnel function in institutions of higher education through a consideration of personnel policies and operating principles.

**836 Evaluation Methods: Principles of Needs Assessment I G 4**

Introduction to the concept of need, issues in needs assessment, and types of needs assessment strategies with a special emphasis on basic techniques and procedures.

1 2.5-hr cl. Prereq: 765 or Ed T&P 765 or permission of instructor. Not open to students with credit for Ed-T&P 863 or Ed S&R 851.

**837 Evaluation Methods: Principles for the Evaluation of Professional Personnel in Education G 3**

Designed to help people to manage the design, implementation, and evaluation of performance appraisal and review systems in educational organizations.

1 2.5-hr cl. Not open to students with credit in ED S&R 852. Ed-P&L 765 recommended.

**838 Evaluation Methods: Principles of Needs Assessment II G 3**

A brief overview of needs assessment followed by an inspection of in-depth needs assessment, procedures used in education, agencies, and business/industry settings.

1 2.5-hr cl. Prereq: 765 or 851 or Ed-T&P 765 or Ed-T&P 863 or permission of instructor. Not open to students with credit in ED S&R 853.

**839 Women in Higher Education G 3**

Examines conditions and positions of women in higher education and strategies for enhancing the quality of their experiences in the academy.

Au Qtr. 1 2.5-hr cl.

**840 Legal Aspects of Higher Education Administration G 3**

Statutory and case law are analyzed for administrative implications; changing legal developments in college and university governance patterns.

**841 Curriculum in Higher Education G 3**

A study of representative and experimental college programs in the United States.

1 2.5-hr cl.

**842 Administration of Academic Affairs in Higher Education G 3**

Principles and problems of administering academic affairs in light of development, financial considerations, and evaluation.

1 2.5-hr cl or 2 1.5-hr cl. Prereq: 806.

**843 Administrative Responsibilities and Perspectives: Equity, Learning, and the Individual G 3**

Administrators' responsibility to see equity and the rights of individual are recognized and enhanced in the school setting.

1 2.5-hr cl. Prereq: 846 or permission of instructor. Mandated requirement for the Certification of Administrators in the State of Ohio.

**844 The Educational Leader as Learner: Knowledge and Administration G 3**

Designed to increase the educational administrator's ability to accept and use the notion that human beings believe differently (alternative ideologies) and learn differently (alternate epistemologies).

1 2.5-hr cl.

**845 Politics and Political Leadership in American Education G 3**

A critical examination of national, state, and local politics and political leadership in American education.

2.5-hr cl. Certification students must also enroll for 1 hr of 884A44.

**846 Introduction to Educational Administration G 3**

Introduction to the organizational setting of the school, the nature of administration, and personal decision making about careers in educational administration—a core course in administrator certification.

**847 Human Relations in Educational Administration G 3**

Interpersonal behavior in educational organizations with emphasis on such topics as values, groups, power, communicating, conflict management, motivation, and human diversity.

Prereq: 806 or 846.

**848 Educational Inquiry Within the Affective Domain: Theory and Methods G 4**

Provides theory and practice for advanced graduate students to conduct scientific inquiry within the affective domain including attitudes, values, perceptions, opinions, orientations, and belief.

Sp Qtr. 1 2.5-hr cl. Prereq: 785 and 786.

**849\* Feminist Perspectives of Women in Education G 3**

Examines current positions and conditions of female faculty and students in schools, colleges, and universities. Feminist scholarship provides theoretical lenses through which to consider the intersections of gender, sexuality, race, ethnicity, and class, and their impact on daily lives of women.

Au Qtr. 1 3-hr cl. Prereq: Written permission.

**850 Internship in Educational Research and Development G 3-12**

Internship experiences in research, development, or evaluation settings.  
Prereq: Permission of instructor.  
Arr. Repeatable to a maximum of 12 or hrs.

**851 College Teaching G 3**

Designed as initial preparation for instruction at the college level; focuses on the generic skills, strategies, and issues common to university teaching.  
1 2.5-hr cl. Open to grad students committed to teaching in any area at the college level. This course is graded S/U.

**852 A History of the Education of Women G 3**

Investigation and critical analysis of selected educational theories by significant past and present theorists who have addressed the education of women.  
1 2.5-hr cl. Prereq: Grad standing.

**853 Women, Technology, and Education G 3**

Analysis of issues in the relationships between women's lives and technological development; exploration of current needed educational response to these issues.  
Wi Qtr. 1 2.5-hr cl.

**854 Evaluation Methods: Principles and Techniques for the Evaluation of Teaching and Teachers G 3**

Designed to help people manage the design, implementation, and evaluation of performance appraisal and review systems in educational organizations.  
1 2.5-hr cl. Prereq: 765 or Ed-T&P 765 recommended. Not open to students with credit in ED S&R 854.

**855 The Role of Sports in Society G 5**

Significance of sport to individuals and groups in society.  
2 2-hr cl, 1 hr arr. Prereq: Sociol 465, or equiv.

**856 Observing Classroom Instruction G 3**

Exploration of different approaches used to observe the nature of instruction in classrooms and other educational settings; examines theoretical bases and assumptions.  
1 2.5-hr cl.

**857 Individualizing Instruction G 3**

A study of theory, practice, and materials related to individualizing instruction.  
1 2.5-hr cl.

**858 Case Studies in Higher Education Administration G 3**

Designed to enhance decision-making skills and managerial communication and to increase understanding of current problems and practices in higher education governance and administration.  
Wi Qtr. 1 2-hr cl, 2 1-hr labs. Prereq: 806.

**859 Junior High School Curriculum G 3**

A study of various types of junior high school programs, with special emphasis upon teaching-learning procedures as they apply to the early adolescent years.  
1 2.5-hr cl. Prereq: Ed-T&P 451 or Ed-P&L.

**860 Fundamentals of Curriculum G 3**

Designed to serve as an overview of the field of curriculum and instruction; kindergarten through 12th grade.  
Su, Au, Wi, Sp Qtrs. 1 2.5-hr cl.

**861 Fundamentals of Supervision G 3**

Supervision of instruction emphasizing general principles and practices in elementary and secondary schools.  
1 2.5-hr cl.

**862 Role of the School in the Social Order G 3**

An orientation for teachers and administrators which deals with the basic purposes of secondary education in relation to major issues and current trends.  
1 2.5-hr cl.

**863 An Interpretive History of African-American Education: 1700 1950 G 3**

Designed to give students an understanding of the education of African-Americans from the perspective of African-American scholars.  
1 2.5-hr cl.

**864 Fundamentals of Instruction G 3**

Survey of instructional theory and related behavioral science disciplines; emphasis is on application of principles of instructional theory to classroom teaching.  
1 2.5-hr cl. Prereq: Secondary (587) student teaching or equiv.

**865 Curriculum Theory G 3**

Advanced study of curriculum; kindergarten through the 12th grade.  
Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 860 or equiv.

**866 Supervision Theory G 3**

Advanced study of supervision of instruction; kindergarten through the 12th grade.  
2 1.5-hr cl. Prereq: 861 or equiv.

**867 Educational Experimentation G 2-5**

Analysis of contribution of selected experiments to elementary, secondary, and higher education; design of experimental method for attacking educational problems.  
1 2-hr lab, conf arr. Prereq: 785 or Ed-T&P 785, or ED S&R 785 and 15 or hrs of grad work in educ. Repeatable to a maximum of 5 or hrs.

**868 Laboratory in Curriculum Development G 3**

Advanced study of techniques of curriculum development and organization; specific problems in curriculum development which are of concern to the students enrolled.  
Wi Qtr. 1 2.5-hr cl. Prereq: 862 or equiv.

**869 Instructional Theory G 3**

Advanced study dealing with theoretical conceptions, basic principles, and generalized techniques involved in developing, executing, and evaluating instructional activities.  
1 2.5-hr cl. Prereq: Permission of instructor.

**870 Internationalizing Colleges and Universities G 3**

Examines goals and program strategies for internationalizing colleges and universities, including implications for faculty, students, and the curriculum.  
Au, Wi Qtrs. 1 2.5-hr cl. Explores both broad rationale for internationalizing institutions, as well as specific program elements such as study abroad, international student enrollment, language or international study.

**871 Theories of Gender in Education G 5**

Introduces major intellectual currents informing theories of gender in education.  
Su, Au, Wi, Sp Qtrs. 1 4-hr cl.

**872 Practicum in Curriculum, Instruction, G 3**

A study of the literature and methods of curriculum, instruction, and supervision in a field setting, with emphasis on curriculum.  
1 cl, lab arr. Prereq: 860 or 861; and master's degree.

**873 Problems of Secondary School G 3**

Supervision and curriculum development emphasizing problems involved in initiating and conducting change in the secondary school curriculum.  
1 2.5-hr cl. Prereq: 860.

**874 Item Response Theory (Rasch Model) Techniques for Competency Testing G 3**

Item Response Theory (IRT) specifically the Rasch Model, is examined in-depth followed by hands-on applications of IRT procedures.  
Sp Qtr. 2.5-hr cl. Prereq: 786 or Ed-S&R 796 or equiv. Requires basic statistics and measurement.

**875 Theory and Practice of Cataloging and Classifying Materials for School Media Centers G 3**

Principles, problems, and methods of descriptive cataloging for print and audiovisual materials.  
3 cl. Prereq: 675; students without undergraduate course work in cataloging will be required to complete a 1 hr/wk lab during 875.

**876 Reference Services in the School Media Center G 3**

Principles, problems, and methods of reference services, including organization and administration of key tools (dictionary, directories, and encyclopedias) for both print and audiovisual materials.  
3 cl. Prereq: 875 or equiv.

**877 Appraisal, Selection, and Acquisition of Instructional Materials for School Media Centers G 3**

Criteria and strategy for the appraisal, selection, and acquisition of instructional materials related to curricular and personal needs of school media center users.  
3 cl. Prereq: 876.

**878 Alternative Assessment for Student Learning G 3**

Study of alternative assessment of student learning including performance, authentic, portfolio, and small group learning. Emphasis focuses on principles, procedures and issues in assessment of student learning.  
Wi Qtr. 1 2.5-hr cl. Prereq: Ed-S&R 744 or Ed-S&R 796 or equiv.

**879 Developing Computer-Based Concepts Lessons G 5**

Application of research knowledge to the development of computer-based lessons for teaching concepts.

Wi Qtr. 2 cl, 2 hrs lab, 4 hrs arr. Prereq: 678, or permission of instructor.

**880 Educational Psychology: Cognition, Learning and Instruction G 4**

Examination of theory and research about cognitive perspectives on classroom learning and instruction, particularly research on the teaching and learning of school subjects.

Au Qtr. 2 2-hr cl.

**881 Applications of Regression Analysis to Educational Research G 3**

An introduction to the concepts of regression analysis and their application to research in education and behavioral sciences.

Sp Qtr. 1 2.5-hr cl. Prereq: 786 or Ed-S&R 786 or equiv.

**884 Planned Field Experience**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser.

**884.02 Foreign G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.10 Educational Policy and Leadership G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.30 Educational Administration G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.32 Higher Education G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.36 Teacher Education G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.40 History of Education and Comparative Education G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.44 Educational Administration and Supervision G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.46 Instructional Design G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.49 Curriculum and Instruction G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.50 General Professional Studies G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.60 Quantitative Research, Evaluation and Measurement in Education G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**885 Educational Leadership, Learning and Teaching**

Applies theory from classroom management, learning, motivation, and teaching to the practice of education.

1 3.5-hr cl. Repeatable to a maximum of 8 cr hrs; subdivisions not repeatable. Administrative Licensure course.

**885.01 Early Childhood G 4**

Applies theory from classroom management, learning, motivation, and teaching to the practice of elementary education.

Sp Qtr.

**885.02 Middle Childhood, Adolescence to Young Adulthood G 4**

Applies theory from classroom management, learning, motivation, and teaching to the practice of secondary education.

Au Qtr.

**886 Educational Leadership, Organization Dynamics and School Culture G 4**

Focus on the school as a social system with emphasis on culture, structure, politics, decision making, leadership, and motivation.

Au Qtr. 1 3.5-hr cl. Administrative Licensure course.

**887 Diversity in Higher Education G 3**

A survey of collegiate experimental programs and practices, their philosophies, organization, administration, educational audiences, etc., for the culturally different.

Au Qtr. 1 2.5-hr cl.

**888 Group Interventions in Higher Education G 3**

Emphasis on laboratory learning process for interpersonal growth and organizational dynamics; treatment of group theory, processes, and dynamics.

Au Qtr. 1 3-hr cl, mandatory weekend lab. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**889 Practicum in Instructional Design and Technology G 3-5**

Group observation, limited participation, and functional analysis of design and implementation in instructional systems and environments.

2 cl, 3-9 hrs arr. Repeatable to a maximum of 10 cr hrs.

**890 Action Research to Understand and Improve Educational Practices G 3**

Action research is inquiry aimed at becoming a more astute practitioner by collecting and analyzing data about an aspect of concern about one's practice.

1 2.5-hr cl. Permission of instructor needed for PhD students.

**891 Educational Leadership**

Designed to review relevant leadership theories and then apply those theories to the solution of actual school problems.

Wi Qtr. 1 3.5-hr cl. Repeatable to a maximum of 8 cr hrs; subdivisions not repeatable. Administrative Licensure course.

**891.01 Instructional Leadership and Supervision G 4**

Leading schools for high achievement: emphases on community-based mission, standards and accountability, teacher professionalism and development, equity, and organizational learning for continuous school improvement.

**891.02 Educational Leadership, Inquiry and Ethics G 4**

Leadership and the ethics that undergird decision making.

**893 Advanced Individual Studies****893.10 Educational Policy and Leadership G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.30 Educational Administration G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.32 Higher Education G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.36 Teacher Education G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.40 History of Education and Comparative Education G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.44 Educational Administration and Supervision G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.46 Instructional Design G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.49 Curriculum and Instruction G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.50 General Professional Studies G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.60 Quantitative Research, Evaluation and Measurement in Education G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**894 Advanced Group Studies**

Advanced group studies on special problems in education.

Prereq: Written permission of instructor.

**894.10 Educational Policy and Leadership G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.30 Educational Administration G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.32 Higher Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.36 Teacher Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.40 History of Education and Comparative Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.44 Educational Administration and Supervision G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.46 Instructional Design G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.49 Curriculum and Instruction G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.50 General Professional Studies G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.60 Quantitative Research, Evaluation and Measurement in Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**895 Fundamentals of Instructional Materials and Media G 3**

Theory in educational media applied to the process of instructional development.

1 3-hr cl. Prereq: 675 or practical experience in using educational media in school settings.

**896 Educational Leadership Portfolio Development G 2**

Designed to help students develop a professional portfolio based on administrative and academic experiences.

Wi Qtr. 1 2-hr cl. Prereq or concur: 884.30. Administrative Licensure course.

**897 Designing Multimedia for Instruction G 4**

Introduction to the instructional capabilities and hands-on development of multimedia including videodisc and CDROM; topics include relevant learning theories, programming techniques and design models.

12-hr cl, 2 3-hr labs. Prereq: 678. Fundamentals of computing recommended.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

**901 Motivation in Learning and Teaching G 3**

Examines research and theory about motivation to learn in academic settings, including studies of goal theory, social cognitive approaches and teaching practices.

Au, Wi Qtrs. 1 3-hr cl.

**902 Educational Philosophy of John Dewey G 3**

A systematic study of the writings of John Dewey in their bearings upon educational theory and practice.

1 2.5-hr cl. Prereq: 702.

**903 Fundamentals of Journal Editing G 3**

Fundamentals of journal writing, editing, management, and ethics. Practice in the use of copy-editing symbols and styles of publication.

Au Qtr. 1 2.5-hr cl.

**904 Women: Leadership and Empowerment G 5**

Focus on understanding and enacting leadership and empowerment that is congruent with women's lives and feminist perspectives.

Sp Qtr. 1 2.5-hr cl, 4 hrs social action project. Prereq: Written permission.

**905 Research in Cultural Studies G 3**

Discussion of current research in Cultural Studies in Education.

Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: Two earlier core courses in Cultural Studies. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**906 Contemporary Readings in Cultural Studies G 3**

Explores central topics in Cultural Studies in Education.

Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: 822.

**907 Themes and Theories in Cultural Studies G 3**

Examines themes and theories which undergird cultural studies and relates them to the study of education, technology, sport, and the body.

Au Qtr. 1 3-1r cl.

**910 Admissions and Retention in Higher Education G 3**

Analysis and review of research and practice in college admissions and retention programs.

Su Qtr. 1 2.5-hr cl. Elective in MA and PhD programs in higher education and student affairs.

**912 Impact of College on Students G 3**

Analysis of philosophical assumptions and statistical evidence on the impact of colleges.

Wi Qtr. 1 2.5-hr cl. Part of doctoral core in higher education.

**913 Leadership in Educational Administration G 3**

Study of theory and practice of leadership in educational administration; course directed to doctoral students concentrating in K-12 administration.

Sp Qtr. 1 2.5-hr cl. Limited to 1st yr doctoral students in educational administration. Part of the doctoral core in educational administration.

**914 Strategy and University Leadership G 3**

Advanced study of institutional strategy, resource management and leadership issues for colleges and universities.

Sp Qtr. 1 2.5-hr cl. Prereq: 806 and 842, or permission of instructor. Course for PhD and advanced master's students interested in institutional leadership roles.

**915 Professional Development in Higher Education G 3**

Introduction to research and theoretical foundations of organizational, faculty, and instructional development in higher education; emphasis on major issues and careers in professional development.

Sp Qtr. 1 2.5-hr cl. Prereq: 851. Focus on professional development in higher education. Focus on professional development in higher education.

**916 Data Based Decision Making in Educational Administration G 3**

Examines research in educational administration from a critical perspective.

Au Qtr. 2.5-hr cl. Prereq: Admission to PhD program. Limited to PhD students in ed-admin.

**924 Curriculum and Instruction in Teacher Education G 6**

Study of teacher education curriculum and how instruction is conducted; hands-on experience with newer instructional alternatives, e.g., microteaching, reflective teaching, and simulation.

Au Qtr. 2 2.5-hr cl.

**925 Seminars**

Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

**925.10 Educational Policy and Leadership G 2-5**

Repeatable.

**925.30 Educational Administration G 2-5**

Repeatable.

**925.32 Higher Education G 2-5**

Repeatable.

**925.36 Teacher Education G 2-5**

Repeatable. This course is graded S/U.

**925.40 History of Education and Comparative Education G 2-5**

Repeatable.

**925.44 Educational Administration and Supervision G 2-5**

Repeatable.

**925.46 Instructional Design G 2-5**

Repeatable.

**925.49 Curriculum and Instruction G 2-5**

Repeatable.

**925.50 General Professional Studies G 2-5**

Repeatable.

**927 History of the Universities G 3**

The university as an institution through 10 centuries; patterns of development in different countries; German, English, and American contributions to the idea of the American university.

2 1.5-hr cl.

**928 Inquiry in Teacher Education G 3**

Study of a variety of research in teacher education with emphasis on research on teacher effectiveness.

Sp Qtr. 1 2.5-hr cl.

**929 Developing the Curriculum in Teacher Education G 4**

To acquaint prospective teachers of teachers with processes for curriculum development in teacher education: to permit them to develop a curriculum for the preparation of teachers.

Su Qtr. 1 2-hr cl, 1 2-hr lab. Open only to PhD students.

**930 Internship in Higher Education G 6-12**

Students are assigned as a participant-observer in a work situation closely approximating their vocational goals, under the supervision of a qualified practitioner or professor.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**931 Applied Evaluation Design G 3**

Techniques for planning, implementing, and reporting the evaluation of programs in varied educational settings.

1 2-hr cl. Prereq: 765 or Ed-S&R 765 Ed-S&R 785 or equivs or permission of instructor. Not open to students with credit for Ed-T&P 930 or ED S&R 930.

**932 Trends, Issues, and Problems in Teacher Education G 3**

Provides awareness and knowledge of critical events and circumstances related to teacher preparation.

Wi Qtr. 1 2.5-hr cl.

**937 Roles of Field and Clinical Experiences in Teacher Education G 3**

An analysis of student teaching and related direct experiences in teacher education with special emphasis on the theoretical basis, purposes, organization, curriculum patterns, evaluation, administration, and problems in the design of experiences.

Wi Qtr. 3 cl. Prereq: Master's degree, college supervision of student teachers, or permission of instructor.

**943 Interaction of the Student and the G 3**

A focus on the nature of the college environment, entering student, academic procedures, student performance, and student culture for those planning careers in college student personnel work.

Sp Qtr. 2 1.5-hr cl.

**945 Practicum in Higher Education G 5**

Supervised practicum in higher education offices such as admissions, dean of students, academic affairs, housing, international students, financial aid, student union.

Su, Au, Wi, Sp Qtrs. 1 1.5-hr cl, 8-10 hrs lab arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**946 The Writings of C. G. Jung: Implications for Educational Research and Practice G 3**

The writings of Jung are critically examined; implications for educational research and practice are discussed, with emphasis on student/professional development, interpersonal communications, and learning.

1 2.5-hr cl. Prereq: Grad standing

**947 The Theory of Psychological Types: Applications to Education G 3**

The theory of psychological types (C.G. Jung) and related literature will be critically examined, with applications to learner/teacher behaviors, achievement, academic advisement, assessment methods, and research.

2 2.5-hr cl.

**949 Collective Bargaining and Contract G 3**

Introduction to the processes of collective bargaining in educational organizations.

1 2.5-hr cl. Prereq: 813, 846, 847, or permission of the instructor.

**952 Legal Aspects of School Administration G 3**

A study of statutory and case law, legal principles, and provisions relevant to educational administration, particularly in the areas of personnel, finance, curriculum, contracts, property, liability, and organization.

1 2.5-hr cl. Prereq: 846 or equiv.

**953 School Community Relations G 3**

Principles and practice in developing and maintaining appropriate school community relationships; opinion analysis; communication processes; decision-making patterns.

1 2.5-hr cl. Prereq: 846 or equiv.

**954 Theory and Practice Student Development in Higher Education G 3**

The organization and practice of student development services; college student development theory and approaches to student development.

Wi, Sp Qtrs. 1 3-hr cl. Repeatable to a maximum of 6 or hrs.

**955 Staff Personnel Administration G 3**

Study of personnel administration in educational institutions; theory, principles, and practices as they relate to personnel policy, recruitment, selection, orientation, appraisal, in-service education, promotion, collective negotiations, and general welfare.

1 2.5-hr cl. Prereq: 846.

**956 School Finance G 3**

Examination of the theory and economics of financing public education; emphasis on sources of revenue, variations in ability and effort, state-local plans, and the federal role.

1 2.5-hr cl. Prereq: 846.

**958 Educational Facility Planning G 3**

Problems and techniques in determining educational facility needs, evaluating facilities, planning for new construction and remodeling, and utilizing specialized personnel; related legal and financial aspects.

1 2.5-hr cl. Prereq: 846 or equiv.

**959 Doctoral Core I G 4**

Analysis of significant research in organization theory.

2 2-hr cl, lab arr. Prereq: Master's degree and permission of instructor.

**960 Doctoral Core II G 4**

Advanced study of administrative problems, leadership, and organization behavior from personality and developmental perspectives.

Wi Qtr. 22-hr cl, lab arr. Prereq: Master's degree and permission of instructor.

**961 Doctoral Core III G 4**

Advanced study of the political and social settings of education.

2 2-hr cl, lab arr. Prereq: Master's degree and permission of instructor.

**962 Board Relations G 3**

A study of the respective ideas and responsibilities of the board of education (board of trustees) and the superintendent (chief educational administrator) in the governance of the school district (college/university).

2.5-hr cl. Prereq: 810, 813, 846, 849, 861, and 925D44.

**963 Legal Aspects of Special Education Administration G 3**

Legislative, executive, and judicial action pertaining to the rights of students with disabilities, with focus on the responsibilities of school administrators and state officials.

1 cl. Prereq: 840, 952N, or permission of instructor.

**966 Practicum In Educational Research and Evaluation G 3**

The utilization of research strategies and evaluation techniques in studying educational problems with emphasis upon the development, conduct, and completion of individual projects.

3 cl. Prereq: Previous courses in the basic sequence in educational research or evaluation or permission of instructor. Not open to students with credit for Ed P&L or Ed T&P 966.

**967 Analyzing Qualitative Data in Educational Research G 5**

Focus on the interpretation of qualitative data and the writing of research reports.

Wi, Sp Qtrs. 1 3-hr cl, 6 hrs lab. Prereq: 800 and 966 or equivs.

**971 Legal Research in Educational Administration G 3**

Inquiry into the field of educational administration using research methodology.

Wi Qtr. 1 2.5-hr cl. Limited to 1st yr doctoral students in educational administration. Part of the doctoral core in educational administration.

**999 Research**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs.

**999.10 Educational Policy and Leadership G 1-18**

Repeatable. This course is graded S/U.

**999.30 Educational Administration G 1-18**

Repeatable. This course is graded S/U.

**999.32 Higher Education G 1-18**

Repeatable. This course is graded S/U.

**999.36 Teacher Education G 1-18**

Repeatable. This course is graded S/U.

**999.44 Educational Administration and Supervision G 1-18**

Repeatable. This course is graded S/U.

**999.46 Instructional Design G 1-18**

Repeatable. This course is graded S/U.

**999.49 Curriculum and Instruction G 1-18**

Repeatable. This course is graded S/U.

**999.50 General Professional Studies G 1-18**

Repeatable. This course is graded S/U.

**999.60 Quantitative Research, Evaluation and Measurement in Education G 1-18**

Repeatable. This course is graded S/U.

## Education: Physical Activity and Educational Services

Office of Student Services and Academic Programs

215 Pomerene Hall, 1760 Neil Avenue 614-292-6787

Although all prerequisites and exclusions may not be listed, they are still in effect and will be enforced, (i.e. students who have taken a course with a different prefix, prior to College restructuring, cannot receive credit for the same course, even though the course may have a new prefix and be located in a different academic unit. Prerequisites will have new prefixes and/or new numbers, but will be enforced. If you are unsure, please contact the Office of Student Services and Academic Programs listed above.)

Notice: All courses may not appear in this listing. (For a complete listing of courses, please contact the Office of Student Services and Academic Programs listed above.)

The areas of specialization and the courses in the School of Physical Activity and Educational Services are listed below:

**Special Education**

251, 289.10, 650, 669, 676, 677, 693.10, 705, 712, 715, 718, 725, 742, 743, 746, 748, 749, 750, 751, 752, 764, 771, 772, 805, 812, 813, 825, 826, 829, 830, 831, 832, 833, 847, 848, 861, 871, 873, 874, 884.10, 885.14, 885.48, 885.54, 885.62, 888, 893.10, 925.10, 999.10

**Sport and Exercise Sciences**

102-197, 200, 201, 204, 205, 208, 209, 221, 245, 250, 262, 263, 289.03, 293, 300, 301, 302, 303, 304, 305, 312, 314, 360, 380, 400, 401, 402, 410, 414, 489, 490.10 - 13, 509, 514, 521, 522, 525, 531, 542, 544, 545, 589, 600.02, 601, 602, 604, 605, 607, 625, 626.01, 626.02, 626.03, 630, 631, 635, 636, 637, 640, 643, 651, 652, 654, 657, 660.01, 660.02, 660.03, 661, 676, 681, 685, 686, 693.20, 706, 707, 708, 709, 710, 714, 723, 724, 726, 732, 740, 741, 754, 755, 759, 762, 765, 785, 786, 787, 795, 802.01, 802.02, 802.03, 802.04, 806, 807, 808, 809, 819, 823, 835, 836, 840, 841, 851, 855, 865, 867, 868, 869, 870, 871, 872, 880, 881.02, 884.20, 886, 889, 893.20, 925.20, 951, 952, 953, 989, 999.20

**Sport, Fitness and Health Program**

102-197, 204, 250, 312, 314

Counselor Education, Rehabilitation Services, and School Psychology  
270.01, 270.02, 270.03, 270.04, 271, 289.01, 728, 767, 768, 773, 774, 775, 776, 779, 790, 791, 792, 800.01, 800.02, 801.01, 801.02, 862, 864, 875, 876, 884.25, 884.34, 884.63, 893.25, 893.34, 893.63, 925.25, 925.34, 925.63, 926.01-.09, 927, 928, 974, 975, 976, 977, 978, 979, 981, 982, 983, 984, 990, 991, 992, 995, 999.25, 999.34, 999.63.

#### Workforce Development & Education

575.02-575.09, 609, 612, 622, 623, 624, 628.01, 628.02, 628.03, 629, 632, 633, 646, 648, 649, 655, 662, 663, 664, 665, 667, 668.01-.09, 672, 673, 674, 693.40, 702, 757, 788, 789, 803, 804, 811, 817, 818, 828, 834, 838, 925.40, 931, 932, 934, 935, 961, 999.40.

#### General Prerequisite for Courses Numbered 600 or 700

The minimal requirement for 600- and 700-level courses is junior standing.

#### 102 First Aid U 2

A consideration of first aid practices to the injured; designed to lead to Red Cross certification in first aid.

2 hrs arr lab.

#### 103 Health and Well-Being in American Society U 3

A study of student health problems; designed to foster understandings and attitudes needed for intelligent decision-making related to present and future health needs.

3 hrs arr. Not open to students with credit for 200.

#### 122 Techniques in Cardiopulmonary Resuscitation U 1

Development of skills and competency in recognizing and reacting to situations requiring cardiopulmonary resuscitation measures; completion leads to certification in CPR by American Red Cross.

1 cl. This course is graded S/U.

#### 137 Sport for the Spectator U 3

A study of the great American spectator sports including football, basketball, baseball, ice hockey, golf, tennis, and others which meet the interests of the class.

1 2-hr cl, 1 2-hr lab.

#### 139 Introductory Program of Outdoor Pursuits

A study of and participation in the skills and knowledges of various sports and outdoor recreational activities in a natural setting. Not open to students who have completed a corresponding subdivision of 140.

Minimum of 6 cl and 24 lab hrs. Arr. Preregistration with department required. Travel and subsistence costs for activities will be borne by the student.

##### 139.01 Scuba II U 1

Introduction to fresh water diving.

Prereq: 179 or equiv. Student must provide wetsuit (rentals may be available). This course is graded S/U.

##### 139.02 Whitewater Rafting U 1

Introduction to basic whitewater rafting, including: river reading, paddling techniques, equipment, trip planning, and safety.

6 cl hrs, 24 lab hrs, arr trip. Prereq: Student must provide sleeping bag and appropriate clothing for river conditions. This course is graded S/U.

##### 139.03 Backpacking I U 1

Introduction to basic backpacking techniques, equipment, wilderness travel, emergency procedures, and environmental awareness.

Student must provide sleeping bag and hiking boots. This course is graded S/U.

##### 139.04 Cycling I U 1

Introduction to cycle touring with an emphasis on safety, equipment repair, maintenance, and trip planning. Student must provide bicycle and sleeping bag.

This course is graded S/U.

##### 139.05 Winter Backpacking U 1

Designed for the experienced backpacker and covers winter camping, clothing, travel techniques, and advanced first aid.

Prereq: 139.03 or previous backpacking experience. Student must provide sleeping bag and hiking boots. This course is graded S/U.

##### 139.06 Skiing U 1

Alpine and/or cross country skiing with instruction appropriate to various ski levels.

Prereq: Ski experience desirable. Repeatable to a maximum of 3 cr hrs. Student must provide boots, poles and skis (rentals available). This course is graded S/U.

##### 139.07 Experimental Sections U 1

Activities will be announced and publicized whenever an experimental section is deemed worthy of trial.

This course is graded S/U.

##### 139.08 Canoeing II U 1

Use of canoeing skills on an overnight trip or on several day trips in the area.

Prereq: 177.02 or equiv. Student must provide sleeping bag on overnight trip. This course is graded S/U.

#### 139.09 Caving I U 1

Introduction to basic caving techniques, equipment, trip planning, and safety; cave related ecology, flora, and fauna will also be emphasized. Student must provide sleeping bag. This course is graded S/U.

#### 139.10 Lightweight Backpacking U 1

Advanced backpacking activities including navigation, rope handling skills, and survival techniques.

Prereq: 139.03 or previous backpacking experience. Not open to students with credit for 140.05. Student must provide sleeping bag and hiking boots. This course is graded S/U.

#### 139.11 Rock Climbing U 1

Basic rock climbing techniques, rope handling, and safety systems will be covered.

Prereq: Good physical condition. Students must provide sleeping bag, appropriate footwear for the climbing trip and a 20' length of new 1" nylon webbing. This course is graded S/U.

#### 139.12 Beginning Trap Shooting U 1

An introductory course covering equipment selection and maintenance, shooting techniques, scoring, safety, and the opportunities for lifetime involvement.

Cost of ammunition and targets must be borne by the student. This course is graded S/U.

#### 139.13 Orienteering U 1

Introduction to the sport of orienteering involving compass skills, map reading, and cross-country travel; cross-country racing in its competitive form.

Student must provide compass and bear transportation costs. This course is graded S/U.

#### 139.16 Small Bore Outdoor Prone Rifle Shooting U 1

A continuation of 171.01 and 171.02 in the sport of outdoor prone shooting as practiced locally and nationally.

Arr. Prereq: 171.01 or 171.02 or permission of instructor. Repeatable to a maximum of 2 cr hrs. Fee for supplies required. This course is graded S/U.

#### 140 Outdoor Pursuits Program

A study of and participation in the skills and knowledge of various sports and outdoor recreational activities in a natural setting.

Minimum of 53-hr training sessions; minimum of eight trip days. Preregistration with dept is required.

##### 140.03 Backpacking II U 3

Opportunity for practice in advanced camping and outing skills on an extended trip.

Prereq: Backpacking I or prior backpacking experience.

##### 140.06 Skiing U 3

##### 140.07 Experimental Sections U 3

Activities deemed worthy of developing on an experimental basis; activities will be announced and published when course is offered.

##### 140.10 Wilderness Advanced First Aid U 3

Will prepare students for emergency situations that involve prolonged patient care and transport, severe environments, and improvised gear. 4 day intensive live-in program.

Arr. Repeatable to a maximum of 6 cr hrs.

#### 141 Adapted Physical Education Activities U 1

Special sections of conditioning and sport activities open only to students with temporary or permanent physical disabilities which would prevent their participation in regular classes. Offerings to be announced quarterly. Students register for desired section using alphabetical designation.

2 lab hrs arr. Repeatable to a maximum of 12 cr hrs.

A— Archery

B— Badminton

D— Bowling

E— Special Conditioning

F— Golf

G— Riflery

H— Basic Swimming

I— Table Tennis

J— Tennis

K— Self Defense

#### 142 Archery

##### 142.01 Archery I U 1

Introductory skills and knowledges essential for target shooting.

2 lab hrs arr.

#### 143 Badminton

2 lab hrs arr.

##### 143.01 Badminton I U 1

Beginning skills and knowledge essential for playing badminton.



**143.02 Badminton II U 1**

Continuation of 143.01 with emphasis on advanced strategy in doubles and singles; intermediate skills.

2 lab hrs arr. Prereq: 143.01 or equiv racquet sport experience.

**144 Basketball U 1**

Skill and strategy necessary for playing basketball.

2 lab hrs arr. Prereq: Previous playing experience. Those with varsity experience should elect 631.02. Registration must include letter designation.

A—Women

B—Men

**145 Bowling**

2 lab hrs arr. Students must provide bowling shoes (rentals available) and have ID card.

**145.01 Bowling I U 1**

Introductory skills and knowledge essential for bowling.

**145.02 Bowling II U 1**

Emphasis on improving the average through increased efficiency in the use of the hook ball and spot bowling.

Prereq: 145.01 or ability to average at least 125.

**146 Boxing for Beginners U 1**

Fundamentals of boxing.

2 lab hrs arr.

**147 Conditioning Activities U 2**

Lecture material covering principles of conditioning is applied in the activity section which the student elects. Register for desired laboratory sections using alphabetical designation.

1 cl, 3 1-hr lab.

A—Circuit Training

C—Jogging

F—Swimming—Prereq: 178.03 or equiv.

G—Weight Training

H—Diet and Exercise

J—Rhythmic aerobics

**148 Lifetime Fitness Programs U 1**

Continued application of the principles covered in 147. Register for desired laboratory section using alphabetical designation.

3 1-hr labs. Subdivisions not repeatable. Repeatable to a maximum of 2 cr hrs.

A—Circuit Training

C—Jogging

F—Swimming—Prereq: 178.03 or equiv.

G—Weight Training

H—Diet and Exercise

J—Rhythmic Aerobics

**151 Advanced Strength and Conditioning U 3**

Strength and power training; advanced anaerobic and speed conditioning.

4 2-hr cl. Prereq: Permission of instructor based on past strength training and experience and current conditioning level as determined by pretest. Not open to students with credit for Hper 150. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**153 Recreational Dance Forms**

Beginning, intermediate, and advanced level courses in social dance and folk/square dance; women register for "A" sections, men for "B" to insure even pairing.

**153.01 Social Dance I U 1**

Introduction to basic steps and variations of selected standard social dances including foxtrot, waltz, swing, cha-cha, rumba, and tango.

1 2-hr cl.

**153.02 Social Dance II U 2**

Continuation of 153.01 with emphasis on style and technique; introduction of additional social dance contents.

2 2-hr cl. Prereq: 153.01.

**153.03 Social Dance III U 2**

Advanced social dance skills and techniques with increased emphasis on design and development of steps and variations; a performance project is required.

2 2-hr cl. Prereq: 153.02. Repeatable to a maximum of 4 cr hrs.

**153.05 Folk and Square Dance I U 1**

Introduction to basic folk and square dance steps and patterns.

1 2-hr cl.

**153.06 Folk and Square Dance II U 2**

Continuation of 153.05 with additional instruction in New England contra dancing and clogging; rhythmical acuity and correct styling are stressed.

2 2-hr cl. Prereq: 153.05 or equiv.

**154 Fencing****154.01 Fencing I U 1**

Fundamentals of foil fencing.

2 lab hrs arr.

**154.02 Fencing II U 1**

Continuation of 154.01 with emphasis on the bout.

2 lab hrs arr. Prereq: 154.01 or equiv.

**156 Football**

Fundamental skills of touch football.

2 lab hrs arr.

**156.03 Flag Football U 1**

Co-ed sections for experienced touch football players.

**157 Golf**

2 lab hrs.

**157.01 Golf I U 1**

Introductory skills and knowledge preparatory to course play with emphasis on irons.

**157.02 Golf II U 1**

Continuation of 157.01 with emphasis on woods and on introduction to course play.

Prereq: 157.01 or equiv. Advanced players should elect 631.06.

**158 Gymnastics**

Development and practice of gymnastic skills.

2 lab hrs arr. Subdivisions 158.01 and 158.04 not repeatable.

**158.01 Women's Gymnastics I U 1**

Introduction to the four Olympic gymnastic events for women: floor exercise, vaulting, beam, and uneven parallel bars.

2 cl.

**158.02 Women's Gymnastics II U 1**

Continuation of 158.01.

2 cl. Prereq: 158.01 or previous experience. Repeatable to a maximum of 2 cr hrs.

**158.04 Men's Gymnastics I U 1**

Introduction to the six Olympic gymnastics events for men: floor exercise, side horse, rings, vaulting, parallel bars, and horizontal bar.

2 cl.

**158.10 Tumbling I U 1**

Introduction to basic through advanced-basic tumbling skills.

1 2-hr cl or 2 1-hr cl.

**158.11 Tumbling II U 1**

Introduction to advanced-basic through intermediate tumbling skills.

1 2-hr cl or 2 1-hr cl. Prereq: 158.10 or previous experience.

**161 Horseback Riding**

3 lab hrs arr. Travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Offered only when arrangements can be made with local stables. Preregistration with dept required.

**161.01 Horseback Riding I U 1**

Fundamental skills and knowledge essential for safe riding.

This course is graded S/U.

**161.02 Horseback Riding II U 1**

Continuation of 161.01 with emphasis on improved form and control of the horse.

Prereq: 161.01 or knowledge of canter leads and ability to post diagonals. This course is graded S/U.

**161.03 Horseback Riding III U 1**

Introductory skills of jumping with stress on hunt seat and low jumps.

Prereq: 161.02 or equiv. This course is graded S/U.

**162 Ice Skating**

Basic skills of ice skating.

Students must provide skates (rentals available).

**162.01 Ice Skating I U 1**

Fundamentals of balance, movement, and safety on the ice; forward, backward, and stopping. Guidance in choice, use and care of equipment.

2 lab hrs arr. Open only to beginners. This course is graded S/U.

**162.02 Ice Skating II U 1**

Elementary skating with emphasis on correct technique for basic skills.

2 lab hrs arr. Prereq: 162.01 or ability to skate forward, backward, and stop with no balance problems.

**162.03 Ice Skating III U 2**

Power skating: designed for persons having had more than 30 hrs on ice and who can execute the basic strokes (including back crossovers) with correct techniques.

4 lab hrs. Prereq: 162.02 or 162.04 or equiv skill level.

**163 Figure Skating**

Figure skating skills and techniques including the elements of free skating and compulsory figures.

Students must provide figure skates (no rentals). VPA Admis Cond courses.

**163.01 Figure Skating I U 2**

Lectures: survey of figure skating includes history, types of competition, judging, recreational, and show skating. Lab: introduction to free skating, compulsory figures, and dance skating.

1 cl, 3 lab hrs. Prereq: 162.03 or permission of instructor.

**163.02 Figure Skating II U 2**

Intermediate and advanced freestyle; intermediate: all single jumps, basic spins, and advanced footwork; advanced: jump combinations, spin combinations, and double jumps.

3 lab hrs arr. Prereq: 163.01 or permission of instructor.

**163.03 Creative Skating U 2****163.04 Skating: Ice Dancing U 2****163.05 Competitive Figure Skating U 2**

Compulsory figures and freestyle designed to prepare skater for United States Figure Skating Association tests and competitions.

2 2-hr cl. Prereq: 163.02 or permission of instructor.

**163.06 Precision Team Skating U 1**

Introduction to team skating, including learning of basic holds and basic formations and participating in a group four-minute program to music. Students must be able to skate forward and backward with ease, have good balance, and be able to stop. Figure skates required; rentals are available. There will be one performance outside of class.

1 2-hr cl. Prereq: 162.02 or permission of instructor. Repeatable to a maximum of 3 cr hrs.

**164 Ice Hockey**

Fundamental skills and knowledges essential for playing ice hockey.

2 lab hrs arr. Students must provide hockey skates (rentals available).

**164.01 Ice Hockey I U 1**

Introductory skills and techniques of ice hockey.

Prereq: 162.02 or equiv. Open only to beginners.

**164.03 Ice Hockey II U 1**

Intermediate-advanced play.

Prereq: 164.01 or previous playing experience.

**168 Movement and Self Awareness U 1**

Student's natural movement vocabulary is explored and extended through movement experiences designed to heighten self and social awareness; creative rather than imitative approach is used.

2 lab hrs arr.

**169 Martial Art Forms**

An exploration and orientation to Eastern movement martial art forms.

2 lab hrs arr.

**169.01 Aikido U 1**

An introduction to a harmonizing martial art, designed to increase physical and mental centeredness; to improve grace, balance, awareness, and general movement abilities; to aid in self defense.

**169.04 Judo I U 1**

Introductory skills and knowledge essential in throwing techniques and mat work of Judo.

**169.05 Judo II U 2**

Intermediate skills and techniques of Judo as well as an introduction to the skills involved in competitive Judo.

2 2-hr labs. Prereq: 164.04 or equiv or certified Gokyu by National Collegiate Judo Association.

**169.06 Judo III U 2**

Advanced skill acquisition in techniques of sport Judo and experience in competitive Judo.

2 2-hr labs. Prereq: 169.05 or equiv or certified Yonkyu by National Collegiate Judo Association.

**169.07 Karate I U 1**

Introduction to the fundamental forms and techniques of Karate.

2 lab hrs.

**169.08 Karate II U 2**

The refinement of basic forms and techniques and the introduction of advanced forms; more emphasis on free fighting.

4 lab hrs arr. Prereq: 169.07 or equiv.

**169.10 Shuai Chiao U 1**

Introduction to the various forms and techniques of Shuai Chiao-Chinese wrestling, a combination of Karate and Judo.

2 lab hrs arr.

**169.13 Tae Kwon Do I U 1**

Beginning course in the Korean martial art form; includes etiquette, basic blocking, thrusting and kicking techniques, and self defense.

**169.14 Tae Kwon Do II U 2**

Continuation of Tae Kwon Do I, refinement of technique and form; introduction of intermediate forms and skills, breaking, and conditioning techniques.

2 2-hr cl. Prereq: 169.13.

**169.16 T'ai Chi Ch'uan U 1**

An introduction to T'ai Chi Ch'uan with emphasis on an exploration of body/energy awareness.

Repeatable to a maximum of 3 cr hrs.

**169.17 T'ai Chi Ch'uan II U 1**

Intermediate forms and techniques of T'ai Chi Ch'uan and experience in joint hands operation as well as in combat T'ai Chi Ch'uan.

2 lab hrs arr. Prereq: 169.16 or equiv. Not open to students with credit for 169.17.

**169.18 T'ai Chi Ch'uan III U 2**

Further development of the form practiced in T'ai Chi Ch'uan II; principles of breath control, meditation, and self massage are introduced.

2 2-hr cl. Prereq: 169.17. Repeatable to a maximum of 4 cr hrs.

**170 Racquetball****170.01 Racquetball I U 1**

Beginning skills and knowledge for students with no prior experience in racquetball.

2 lab hrs arr.

**170.02 Racquetball II U 1**

Continuation of 170.01 with emphasis on strategy and the playing of singles.

2 lab hrs arr. Prereq: 170.01 or equiv.

**171 Riflery**

1 2-hr lab.

**171.01 Riflery I U 1**

Introduction to target shooting techniques in the prone and standing positions.

**171.02 Riflery II U 1**

A continuation of 171.01 stressing the other shooting positions.

Prereq: 171.01.

**171.03 International Air Pistol Target Shooting U 1**

Introduction to the sport of international air pistol shooting.

1 2-hr cl.

**172 Self Defense U 1**

Skills and understandings essential to defend oneself against an aggressor with emphasis on avoiding attack.

2 lab hrs arr.

**174 Soccer**

Techniques and knowledge essential for playing soccer.

2 lab hrs arr.

**174.01 Women's Soccer U 1****174.03 Men's Soccer U 1****175 Softball**

Skills and knowledge necessary for playing softball.

2 lab hrs arr.

**175.01 Women's Slo Pitch I U 1****175.02 Women's Slo Pitch II U 1**

Prereq: Intermediate level skills.

**175.06 Men's Slo Pitch I U 1****175.07 Men's Slo Pitch II U 1**

Prereq: Intermediate skills.

**176 Squash U 1**

Skills and knowledge necessary for playing squash.

2 lab hrs arr.

**177 Small Craft Operation**

Introduction to the operation of various types of small craft; emphasis on basic skills and safety procedures.

Prereq: Swim a minimum of 100 yards without stopping.

**177.02 Canoeing I U 1**

Basic paddling skills.

2 lab hrs arr. Open to students with little or no canoeing experience. See 139 for additional offerings.

**178 Swimming and Diving**

Fundamental swimming and diving skills with emphasis on personal safety. 4 lab hrs arr. Student must provide bathing suit. See 147 and 148 for swim conditioning.

**178.01 Swimming I U 2**

Beginning swimming.

Open only to non-swimmers and students with no deep water experience. This course is graded S/U.

**178.02 Swimming II U 2**

Elementary swimming skills for those who can swim in deep water but no farther than 2 pool lengths (50 yards).

**178.03 Swimming III U 2**

Intermediate skills for those who can swim at least 100 yards using the front crawl and at least 2 other strokes.

Prereq: 178.01 or equiv.

**179 Skin and Scuba Diving U 3**

Skills and knowledge essential for safe diving and preparation for open water checkout dives.

2 cl, 2 lab hrs arr. Prereq: Ability to swim .25-mile in 10 min. Student must provide bathing suit and bear cost of required special scuba medical exam. See 139 and 140 for additional offerings.

**180 Springboard Diving**

Prereq: 178.02 or equiv. Student must provide bathing suit.

**180.01 Springboard Diving I U 1**

Fundamentals of diving from the one meter (low) board.  
2 lab hrs arr.

**182 Life Saving and Water Safety**

Student must provide bathing suit. Repeatable to a maximum of 12 hrs.

**182.01 Lifeguarding and Water Safety Instructor Preparation U 1**

Designed to meet course prerequisites for WSI and LGI.

2 hrs lab, arr cl. Prereq: 178.02 or equiv. This course is graded S/U.

**182.02 Water Safety Instructor U 3**

Designed to lead to certification as an American Red Cross Water Safety Instructor.

2 cl, 2 hrs lab, arr. Prereq: 182.01.

**182.05 Lifeguard Training I U 3**

Designed to lead to ARC Lifeguard Training and CPR for the Professional Rescue certification.

6 lab hrs, arr. Prereq: 178.03 or equiv.

**182.06 Lifeguarding Instructor U 3**

Designed to lead to ARC certification as Lifeguard Training; Waterfront Lifeguarding and Head Lifeguard Instructor with the potential to also become a water park Lifeguarding Instructor.

2 cl, 2 lab 182.01, 182.05, 182.15, or permission of instructor. possible visitation to a water park facility.

**182.15 Lifeguard Training II U 1**

A continuation of Lifeguard Training I, this course will lead to certification in Waterfront Lifeguarding and the Head Lifeguard Course with the potential to also be certified in Water Park Lifeguarding.

1 2-hr lab, arr. Prereq: 182.05.

**183 Water Polo U 2**

Introductory skills and knowledge essential in the sport of water polo.

4 lab hrs arr. Prereq: 178.03 or equiv. Student must provide bathing suit.

**185 Table Tennis**

2 lab hrs arr.

**185.01 Table Tennis I U 1**

Beginning skills and knowledge essential for playing table tennis with emphasis on the use of backspin and topspin in the singles game.

**185.02 Table Tennis II U 1**

Continuation of 185.01 with emphasis on advanced strokes and their application in the playing of singles and doubles.

Prereq: 185.01 or the ability to do backspin and topspin serves.

**188 Tennis**

Skills and knowledge essential in playing tennis.

Student must provide racket and 6 balls; advanced students should elect 631.10.

**188.01 Tennis I U 1**

Beginning skills; forehand, backhand, and serve-singles play.

2 lab hrs arr.

**188.02 Tennis II U 1**

Elementary skills; introduction to doubles play.

2 lab hrs arr. Prereq: 188.01 or equiv.

**190 Acroport**

subdivisions not repeatable.

**190.04 Acroport I U 1**

Basic skills in tumbling, and hand balancing.

2 lab hrs.

**190.05 Acroport II U 2**

Continuation of 190.04 with emphasis on routine construction for competition or exhibition.

4 lab hrs arr. Prereq: 190.04.

**191 Volleyball**

4 lab hrs arr. Advanced students should elect 631.14.

**191.01 Volleyball I U 2**

Introduction to power volleyball.

**191.02 Volleyball II U 2**

Continuation of power volleyball fundamental skill perfection and game strategies woven to produce an intermediate playing experience.

Prereq: 191.01 or equiv.

**195 Yoga**

Introduction to fundamental techniques and basic yogic principles of pranayama (breath control), asana (posture), relaxation, and meditation; emphasis on major postures.

**195.01 Yoga I U 1**

2 lab hrs arr.

**195.02 Yoga II U 1**

Asanas (postures) at the intermediate level of Hatha yoga are introduced; continued development and practice of relaxation and meditative techniques; further exploration of yogic philosophy.

1 2-hr cl. Prereq: 195.01 or equiv.

**196 Varsity Squads**

Participation as a player on a varsity squad.

6 lab hrs. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions.

**196.01 Baseball U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.02 Basketball U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.03 Cross Country U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.04 Fencing U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.05 Field Hockey U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.06 Football U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.07 Golf U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.08 Gymnastics U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.09 Ice Hockey U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.10 Lacrosse U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.11 Pistol U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.12 Riflery U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.13 Soccer U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.14 Softball U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.15 Swimming and Diving U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.16 Swimming (Synchronized) U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.17 Tennis U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.18 Track U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.19 Volleyball U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.20 Wrestling U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**196.21 Crew U 2**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**197 Competitive Club Sports U 1**

Participation as a member of a competitive club sport team.

3 lab hrs. Prereq: Prior experience on at least one competitive club sport team and soph standing. Repeatable to a maximum of 3 cr hrs. Preregistration with dept required. This course is graded S/U.

**200 Health and Behavior U 5**

Designed to establish a basis for positive health and efficiency through a consideration of various conditions and factors which affect health.

5 hrs arr. Not open to students with credit for 103. Open only to students admitted to a major in PAES, Dental Hygiene or permission of instructor.

**201 Current Concepts in Community Health U 3**

A study of community health programs, the need for them, the problems and issues involved, and how these problems can be solved.

3 hrs arr.

**204 Sexuality and Health U 3**

The study of sexuality as an aspect of the healthy individual; the demythologizing of sexual beliefs and behaviors; sexual behavior and attitudes in young adults.

3 hrs arr.

**205 Social Recreation U 2**

Age characteristics and developmental levels relative to social activities; techniques, rules, strategy and social behaviors in a range of cultural activities, i.e., social games and pastimes.

2 cl. Not open to students with credit for Hper 200. SS Admis Cond course.

**208 Orientation to Sport and Leisure Studies U 2**

A general introduction to sport and leisure studies. Examination of the current scene, curricular opportunities, careers, and needed personal competencies. Two observations in various sport and leisure settings.

2 1-hr cl.

**209 Orientation to Exercise Science U 1**

A general introduction to exercise science focusing on instrumentation; measurement, and training equipment.

1 cl. 2-hrs clinical. Open only to students admitted to the Exercise Science program.

**221 Sports Officiating**

Study of playing rules, rule interpretation, techniques, and mechanics of officiating various interscholastic and intercollegiate athletic sports.

2 cl. Prereq: Satisfactory evidence of playing skill in the elected athletic sport.

**221.01 Baseball U 2****221.02 Basketball U 2**

Students completing the course are eligible for certification to officiate in Ohio schools.

**221.04 Football U 2**

Students completing the course are eligible for certification to officiate in Ohio schools.

**221.12 Wrestling U 2**

Students completing the course are eligible for certification to officiate in Ohio schools.

**221.14 Volleyball U 2****221.15 Softball U 2****245 Recreation Leadership U 3**

Methods and materials for comprehensive programming with individuals and different groups in a variety of recreation settings.

2 1.5-hr cl. Prereq: 208, or permission of instructor.

**250 How to Avoid Dying from Cancer Now and Later U 2**

Discussion of the latest findings on avoiding cancer through lifestyle choices and assessment of one's family health history.

1 2-hr cl.

**251 Introduction to Exceptional Learners U 3**

Overview of educational treatment and rehabilitation programs for individuals with sensory, orthopedic, behavioral, and learning problems.

1 2.5-hr cl. Prereq: Written permission of instructor.

**262 Coaching the Young Athlete U 3**

Skills and knowledges essential to planning, coaching, and supervising competitive sports programs which are consistent with the needs of children.

2 1.5-hr cl.

**263 Special Issues Affecting Contemporary Student-Athletes U 3**

An exploration of current topics and problems concerning collegiate athletes and the decision-making skills needed to facilitate college adjustment.

2 1.5-hr cl.

**270 Seminars in Career and Self Development**

Examination of self in relation to educational and career goals; self assessment, decision making, identification and use of campus resources, employability, and work adjustment skills.

1 2.5-hr cl. Repeatable hrs, including cr hrs in Ed-P&L 270.04; with a maximum of 3 cr hrs in any decimal subdivision.

**270.01 Self-Career Development U 3**

Designed to provide opportunities for self-exploration and skill development; exploration of and clarification of vocational and educational interests.

This course is graded S/U.

**270.02 Personal Growth to Increase Career Competencies U 3**

Designed to provide opportunities to assist in self-exploration of and clarification for more effective development beyond the level of average performance.

This course is graded S/U.

**270.03 Study Skills Related to Career Goals U 3**

Designed to assist underachieving students with their efforts to ascertain and resolve the causes of low academic productivity; attitudinal and behavioral skills emphasized.

This course is graded S/U.

**270.04 Career Development and Leadership Training in Higher Education U 3**

Designed to explore possible careers in higher education and to conduct leadership training in terms of higher educational functions and organizations.

This course is graded S/U.

**271 Seminar in Exploring Helping Relationships: Teaching/Learning U 3**

Focus on self development, decision making, world of work for students exploring careers through placement in educational, and community agency settings. Repeatable to a maximum with special written permission, when unusual circumstances warrant.

1 3-hr cl. Repeatable to a maximum of 6 cr hrs. To be taken concurrently with field experience 289.01.

**289 Directed Field Experience**

Professional service in school or community settings.

Preregistration with school required.

**289.01 Intro Experience in a School System U 2-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**289.02 Experience in a Community Agency U 2-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**289.03 Sport and Leisure Studies U 2-5**

Open only to students admitted to a major in PAES or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**289.10 General Special Education U 2-5**

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**293 Sport and Exercise Science: Individual Study U 1-4**

For individuals who wish to pursue special studies in work not normally offered in courses.

Arr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**294 Sport and Exercise Science: Group Study U 1-5**

For groups of students who wish to pursue special studies.

Arr. Prereq: Permission of dept required. Repeatable to a maximum of 10 cr hrs.

**300 Health Education for Elementary Teachers U 3**

The teacher's responsibility for health of school child; screening, referral, vision and hearing, nutritional problems, instructional programs, emergency care, and teacher's health.

3 hrs arr. Prereq: 103 and; admission to EDU. Not open to undergrad minors or majors in phys ed or hith edu.

**301 Field Sports U 3**

Acquisition of performance skills in a variety of field sports, including rules, traditions, and values of the sports and their roles in various sport cultures.

2 2-hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

**302 Racquet Sports U 3**

Acquisition of performance skills in a variety of racquet sports, including rules, traditions, and values of the sports and their roles in various sport cultures.

2 2-hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

**303 Individual Sports U 3**

Acquisition of performance skills in a variety of individual sports, including rules, traditions, and values of the sports and their roles in various sport cultures.

2 2-hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

**304 Gymnastics U 3**

Acquisition of performance skills in a variety of gymnastics activities, including rules, traditions, and values of gymnastics activities and their roles in various sport cultures.

2 2-hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

**305 Court Games U 3**

Acquisition of performance skills in a variety of court games, including rules, traditions, and values of the games and their role in various sport cultures. 2 2-hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

**312 Issues in Alcohol/Drug Use and Abuse U 3**

Provides an understanding of the dynamics of substance abuse. 1 2.5-hr cl.

**314 AIDS: What Every College Student Should Know U 3**

A review of the physiological, psychological, social, legal, and moral issues surrounding the disease AIDS with emphasis placed on responsible decision making about one's lifestyle.

1 2.5-hr cl. Not open to students with credit for HPER 314.

**315 Positive Transitions for Intercollegiate Student-Athletes U 2**

Addresses transitional issues unique to intercollegiate student-athletes. Students will learn appropriate developmental "Life Skills" needed to facilitate their personal and career adjustment.

Prereq: Jr standing or permission of instructor. This course is graded S/U.

**360 Kinesiology U 4**

A study of functional anatomy and biomechanics and their application to human movement.

3 cl, 1 2-hr lab.

**380 Exercise Physiology and Sport Performance U 5**

Provide students with information and skills that will enhance their understanding of the principles of exercise physiology and athletic fitness, and to improve their ability to prepare athletes for competition.

4 1-hr cl, 1 2-hr lab. Not open to students with credit for 414 or 514. Open only to students admitted to a PAES major or the coaching education minor who have completed Zoology 232, EEOB 232 or permission of instructor.

**400 Basic Teaching Skills for Health Professionals U 3**

Health-related teaching skills; development of learning objectives, use of different media and teaching strategies such as lecture, group process, and tutorial method.

2 2-hr cl. Prereq: Enrollment in one of the health professions schools.

**401 Fundamentals of Epidemiology and Biostatistics U 3**

Introduction to factors affecting the distribution of health problems in populations and to disease causation.

3 cl. Prereq: 201 or permission of instructor.

**410 History of Leisure and Physical Activities in Western Society U 3**

Examination of the evolution of leisure, recreation, and physical education as personal, cultural, and institutional activity.

2 1.5-hr cl. Prereq: 208 or permission of instructor.

**414 Applied Physiology of Exercise U 4**

In-depth examination of the effects of acute and chronic exercise on the human body.

3 cl, 1 2-hr lab. Prereq: Physiol 311 and 312, or Physiol & CB 311 and 312.

**489 Advanced Field Experience**

Directed teaching experience for advanced undergraduate students in Edu PAES.

Open only to students admitted in a major in PAES having completed 601 or permission of the instructor. Requires preregistration with the department.

**489.05 Interscholastic Coaching U 2-5**

Directed coaching experience.

SLS coaching strand prereqs are 643, 657, 661. Open only to students admitted to a major in PAES or coaching education minor or permission of the instructor. Repeatable to a maximum of 20 cr hrs.

**489.09 Teaching in Physical Activity Settings U 2**

Directed teaching experience for advanced undergrad students in Sport and Leisure Studies.

Prereq: 601 or permission of instructor. Open only to students admitted in a major in PAES. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**490 Fitness Program Development and Evaluation****490.10 Graded Exercise Testing U 3**

Practical experience conducting graded exercise tests using treadmill and cycle ergometer.

6 hours of arranged practical experience/directed practice. Prereq: 685 and 660.01.

**490.11 Body Composition Evaluation U 2**

Practical experience in the assessment of body composition using anthropometers and hydrostatic weighing procedures.

4 hours of arranged practical experience/directed practice.

**490.12 Muscular Strength and Endurance U 2**

Practical experience in assessing anaerobic power and strength using isokinetic and isotonic methods.

4 hours of arranged practical experience/directed practice.

**490.13 General Fitness Evaluation U 2**

Practical experience conducting fitness/wellness screening for campus community (students, faculty and staff).

4 hours of arranged practical experience/directed practice.

**509 Sport and Leisure Service Delivery and Promotion U 3**

The purpose of this course is to acquaint students with issues related to the promotion of sport and leisure services.

2 1.5-hr cl. Open only to students admitted to a major in PAES or permission of instructor.

**514 Applied Physiology of Exercise U 4**

Continuation of 414.

3 2-hr cl, 1 2-hr lab. Prereq: 414.

**521 Sport Skill and Strategy Analysis I U 3**

Analysis and diagnosis of closed sport and movement skill performance.

2 1-hr cl, 1 2-hr lab. Open only to students admitted to a major in PAES or permission of instructor.

**522 Sport Skill and Strategy Analysis II U 3**

Analysis and diagnosis of open sport and movement skill performance.

2 1-hr cl, 1 2-hr lab. Prereq: 521. Open only to students admitted to a major in PAES or permission of the instructor.

**525 Promoting Behavior Change in Sport, Leisure and Exercise U 3**

Introduction to behavior change strategies, to include the acquisition, maintenance, and generalization of behavior change useful in sport and exercise settings, and leisure activities.

3 1-hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

**531 Social Issues and Concerns in Sport, Leisure, and Exercise Behavior U 5**

Examination of social and ethical issues such as discrimination, drug use, and the significance of the sport experience to individuals and sub-groups in the United States. Prereq: Completion of first and second writing courses.

2 2-hr cl, 1 hr arr. Open only to students admitted to a major in PAES or permission of instructor. GEC/LAR course.

**542 Lifespan Motor Development U 5**

Physical growth, development, and motor behavior across the lifespan.

3 cl and 2 2.5-hr clinical experiences.

**544 Sport and Leisure Perspectives for Special Populations U 3**

Introduction to sport and leisure for persons with special needs across school, community, and clinical based programs.

2 2.5-hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

**545 Programming in Sport and Recreation U 3**

Examination of the development, organization, and implementation of programs and activities in sport, recreation, and leisure.

2 1.5-hr cl. Prereq: 245. Open only to students admitted to a major in PAES or permission of instructor.

**575 Vocational-Technical Teaching**

Development of basic cognitive and performance skills required to earn a one-year vocational certificate by new nondegree vocational teachers.

Prereq: Current employment as a vocational teacher.

**575.02 Inservice I U 2**

Repeatable to a maximum of 24 cr hrs.

**575.03 Inservice II U 2**

Prereq: 575.02. Repeatable to a maximum of 24 cr hrs.

**575.04 Inservice III U 2**

Prereq: 575.03. Repeatable to a maximum of 24 cr hrs.

**575.05 Two Week Followup Program U 4**

The refinement of curriculum development leadership and human relations skills required by employed, one-year certified vocational teachers. 8 hrs/day for 10 days.

Prereq: 575.04. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**575.06 Vocational-Technical Teaching: In-Service IV U 1**

The development and refinement of basic design and development skills required of a second year nondegree vocational teacher to earn a one-year vocational certificate.

**575.07 Vocational-Technical Teaching: In-Service V U 1**

Continuation of 575.06.

Arr cl. Prereq: 575.06.

**575.08 Vocational-Technical Teaching: In-Service VI U 1**

Continuation of 575.07.

Arr. Prereq: 575.07.

**589 Internship**

Directed and supervised experience in a professional setting.

Arr 30 hrs/wk. Preregistration with the school required.

**589.01 Exercise Science U 6-8,15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**589.02 Health Promotion U 6-8,15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**589.03 Sport and Leisure Studies U 6-15**

Prereq: Open only to students admitted to a major in PAES with senior standing who have completed 289.03 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H599 Honors Course U 3-5**

A program of accelerated study for students with special aptitudes.

Arrcl. Prereq: Enrollment in the honors achievement program and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**600 Contemporary Issues in Sport and Leisure**

Studies of relevant contemporary issues and trends in sport and leisure.

**600.02 Sport and Social Values U G 2**

Selected value-laden issues current in the conduct of American sport such as the ethics of competition, equality and excellence, and the place of athletics in education.

2 cl.

**601 Teaching Sport, Leisure, and Exercise U 3**

To introduce teaching and management skills associated with student learning, design of instructional materials and techniques for implementation, and strategies to teach diverse learners in various sport, leisure, and exercise settings.

Open only to students admitted to a major in PAES or permission of the instructor.

**602 Personal Health Promotion U G 3**

An advanced study of personal health promotion; extensive reading and reporting in selected health areas.

3 hrs arr. Prereq: 200 or grad standing.

**604 Education for Human Sexuality U G 3**

Review of current information on health and sexuality for educators and school personnel; consideration of the sex education curriculum, teaching methods, materials, and controversial issues.

3 hrs arr. Prereq: 200, 636 or equiv, Sociol 330, or permission of instructor.

**605 Health Counseling U G 3**

To provide educators and counselors opportunity to develop skills and knowledge to advise students and clients confronted with personal health concerns.

3 hrs. arr. Prereq: 5 hrs of psych; admission to EDU.

**607 Legal Aspects of Sport and Physical Activity U 4**

Development of a responsible and safe attitude toward sport programming; identification of procedures to reduce the probability of injuries/lawsuits resulting from sport and physical activity.

2 2-hr cl. Prereq: Jr standing. Open only to students admitted to a PAES major, the coaching education minor, or permission of instructor.

**609 Evolution of Vocational Education U G 3**

Introduction to the development of vocational education including consideration of influences affecting legislation, federal acts, and basic concepts which have evolved.

1 2.5-hr cl. Prereq: Permission of instructor Not open to students with credit for Ed-Stds 609.

**612 Alcohol and Drug Education U G 3**

The study and development of techniques and programs to prevent or reduce psycho-social problems associated with drug misuse.

1 3-hr cl or 2 2.5-hr cl. Prereq: 636 or permission of instructor.

**620 Coaching of Athletic Sports**

Study in the theory, strategy, and mechanics of coaching various interscholastic; intercollegiate athletic sports.

2 cl, 2 lab hrs. Prereq: Advanced skill level in the elected sport, jr standing and permission of instructor.

**620.01 Baseball U G 3****620.02 Basketball U G 3****620.04 Football U G 3****620.08 Soccer U G 3****620.10 Tennis U G 2****620.11 Track and Field U G 3****620.12 Wrestling U G 2****620.14 Volleyball U G 2****622 Business Technology Education I U G 5**

The relationship of business technology to business education subjects is discussed; foundational understanding and skill/application development in business education subjects.

1 3-hr cl, 2-hr clinical. Prereq: 624 or Ed-Stds 620.

**623 Business Technology Education II U G 5**

Advanced applications of business technology to business education subjects; planning classroom instruction, policy, followup evaluations are discussed; field-based experiences in business and educational settings.

1 3-hr cl, 2-hr lab. Prereq: 622 or Ed-Stds 622.

**624 Foundations of Workforce Development and Education U G 4**

Study of an integrated approach to workforce development and education programs and issues.

1 2.5-hr cl.

**625 History of Physical Education and Sports in the United States U G 3**

The development of physical education and sports in the United States from colonial times to the present and the factors which have affected their growth.

3 1-hr cl.

**626 Sport and Popular Culture Series**

A variety of themes present in selected popular cultural forms dealing with a variety of sports such as football, basketball, baseball, and track and field.

1 1-hr cl, 1 2-hr cl.

**626.01 Sport and Popular Culture Overview U G 3****626.02 Sport and Popular Culture - Race and Gender U G 3**

Prereq: 626.01 or permission of instructor.

**628 Clinical Internship**

20 hrs minimum equal 1 cr hr.

Prereq: EDP students with a CPHR of 2.50 or above, or grad students in good standing.

**628.01 Classroom Observations U G 3-15**

Observation of vocational and technical classroom instruction in field-based educational setting.

Repeatable to a maximum of 15 cr hrs.

**628.02 Experience in Business U G 3-6**

Practical vestibule experience in a private sector setting to gain knowledge of an industry and to develop new skills and knowledge.

Repeatable to a maximum of 6 cr hrs.

**628.03 Teacher Aide U G 4-8**

Practical experience as a professor's aide in a summer teacher certification training clinic or workshop.

Repeatable to a maximum of 8 cr hrs.

**629 Advanced Teaching Internship U G 15**

Responsible and intensive teaching in an approved field-based school setting; teaching styles are practiced under supervision of a career professional, with continual follow-up conferences, seminars.

2-hr cl, 15 hrs field experience. Prereq: Permission of instructor and satisfactory completion of 628 or Ed-Stds 628.

**630 Problems in Intramural Sports U G 2**

A critical analysis of intramural sports programs; problems of policy and administration of programs on the elementary, secondary, and college levels will be studied.

1 2-hr cl.

**631 Advanced Skill Techniques**

Advanced techniques of performance and a specialized and intense study of appropriate technical literature.

4 1-hr labs. Prereq: Advanced skill level, jr standing and permission of instructor.

**631.02 Basketball U G 2**

This course will assist students in acquiring advanced performance skills and strategies in basketball.

Prereq: 144.

**631.04 Football U G 2**

This course will assist students in acquiring advanced performance skills and strategies in flag/touch football.

2 2-hr cl. Prereq: 165.03 or equiv.

**631.05 Gymnastics U G 2****631.06 Golf U G 2****631.08 Soccer U G 2**

This course will assist students in acquiring advanced performance skills and strategies in soccer.

Prereq: 174.

**631.10 Tennis U G 2****631.14 Volleyball U G 2****631.15 Softball U G 2**

2 2-hr cl. Prereq: 175 or equiv.

**631.20 Special Offerings U G 2**

Repeatable to a maximum of 10 or hrs.

**632 Software Applications for Business/Industry Teachers and Trainers U G 5**

Business/industry-oriented foundation to microcomputer applications frequently used by trainers and vocational teachers.

1 3-hr cl, 2-hr lab. Prereq: 622 or Ed-Stds 622 and Cptr/Inf 100.

**633 Instructional Strategies for Vocational Work Experience Programs U G 3**

Preparation and delivery of lessons, placement, and follow-up of students on-the-job.

1 2.5-hr cl. Prereq: Edu major. Not open to students with credit for Ed-Stds 631.

**635 School Health Services U G 3**

Consideration of healthful school living and health services, including health appraisal, counseling, educational adjustments, communicable diseases, and emergency programs.

3 hrs arr. Prereq: 200 or equiv. For majors and minors in health sciences and health education. Not open to students with credit for HPER 635.

**636 Teaching of Health U G 3**

Principles, methods, materials, and resources involved in teaching health; direct, correlated, and integrated curriculum patterns; individual teaching experience.

3-hr cl.

**637 Health Agencies U G 3**

Health agencies: purposes, location, affiliations, sources of funding, staff responsibilities, volunteer opportunities, services, educational materials, and media, with emphasis on writing materials.

2 1.5-hr cl. Prereq: Health Education majors or permission of instructor. Not open to students with credit for HPER 637. GEC course.

**643 Coaching Effectiveness U G 4**

Introduction to the teaching/learning process with emphasis on pedagogical skills necessary for coaching effectiveness.

2 2-hr cl. Prereq: Major in Edu PAES, coaching education minor or 262 if in SLS program or permission of instructor.

**646 Coordination of Cooperative Vocational-Technical Education Programs U G 3**

Designed to develop the knowledges, attitudes, and competencies to operate effectively a cooperative vocational-technical education program.

1 2.5-hr cl. Not open to students with credit for Ed-Stds 646.

**648 Adult Literacy Education U G 3**

Historical/social context of current adult basic education issues and practices related to participation, instructional processes, program planning, evaluation, and research needs.

1 3-hr cl.

**649 General Methods in Adult Education U G 3**

Selection, integration, and evaluation of methods, techniques, and devices to facilitate the learning of adults.

1 2.5-hr cl. Not open to students with credit for Ed-Stds 649.

**650 Introduction to Exceptional Children U G 3**

An overview of the education of exceptional learners including a discussion of their characteristics and a review of historical approaches to their education and of contemporary educational practices.

Not open to students with credit for Psych 570.

**651 Health Program Planning U G 3**

Competency development in formulating and implementing health programs; includes understanding community organization and the health care system, administration, and sustaining programs.

2 1.5-hr cl.

**652 Health Promotion in the Workplace U G 3**

Theoretical and pragmatic aspects of conducting health promotion programs in the workplace; discussion of rationale and relative effectiveness of various health components.

1 2.5-hr cl. Prereq: Sr standing or above. Not open to students with credit for HPER 652.

**654 The Group and Individual in Sport G 3**

An overview of psycho-social factors as they interact with the sport participation of individuals and groups.

2 1.5-hr cl.

**655 Shop and Laboratory Organization and Management U G 3**

Designed to help vocational and technical teachers to plan, organize, and manage vocational shops and technical laboratories used in various educational settings.

1 2.5-hr cl. Not open to students with credit for Ed-Stds 655.

**657 Sport and Disability U G 3**

Overview of sport for individuals with disabilities with special emphasis given to physiological, psychological, and socio-cultural perspectives.

2 1.5-hr cl. Prereq: Acceptance into the Sport and Exercise Studies graduate program or undergrad major in Edu PAES or coaching education minor or permission of instructor.

**660 Laboratories in Exercise Physiology**

Selected laboratory experiences in the field of exercise science.

1 2-hr lab. Subdivisions are not repeatable.

**660.01 Introductory Labs in Exercise Physiology U G 1**

Selected laboratory experiences to include cardiovascular and muscle function testing. To be taken concurrently with 685.

**660.02 Intermediate Laboratories in Exercise Physiology U G 1**

Selected laboratory experiences to include cardiovascular and muscle function testing.

Prereq: 660.01 or equiv.

**660.03 Advanced Laboratories in Exercise Physiology U G 1**

Selected laboratory experiences to include cardiovascular and muscle function testing.

Prereq: 660.02 or equiv.

**661 Care and Prevention of Athletic Injuries U G 5**

A consideration of the methods of prevention and care of injuries, conditioning of athletes and safety provisions for the conduct of physical education.

3 cl, 2 2-hr labs. Prereq: 360. Open only to students admitted to a major in Edu PAES, physiotherapy or coaching education minor or permission of instructor.

**662 Determining Instructional Content of Technical-Skill Training Programs U G 3**

Systematic investigation of data collection and analysis procedures used to determine the content of technical skill jobs.

1 2.5-hr cl.

**663 Organizing Technical-Skill Training Programs U G 3-5**

Investigation of processes used to prepare objectives, evaluate items and budgets, and select and sequence appropriate strategies.

2.5-hr discussion with optional 4 hrs of clinical activities per week. Prereq: 662 and ED-P&amp;L 600.

**665 Making Effective Technical-Skill Presentations U G 4**

Delivery strategies used to present technical and skill information to groups of learners.

Prereq: 662, 663, and 664.

**667 Essentials of Vocational Curriculum and Instruction U G 3**

Study of literature on curriculum and instruction used to prepare future employees, upgrade current employees, and prepare for changes in technology.

2.5-hr cl. Prereq: 662, 663, and 664.

**668 Vocational Teacher Certification Clinics**

Prereq: Employment as a vocational teacher with a one-year temporary certificate.

**668.01 Clinic 1 U G 6**

Development of basic cognitive and performance skills required to earn a one-year vocational certificate by new vocational teachers.

5 6-hr cl for 3 weeks. This course is graded S/U.

**668.02 Clinic 2 G 2**

Supervised clinical work while teaching in a vocational program.

3 hrs clinical. Prereq: 668.01.

**668.03 Clinic 3 G 2**

Continuation of 668.02.

3 hrs clinical. Prereq: 668.02.

**668.04 Clinic 4 G 2**

Continuation of 668.03.

3 hrs clinical. Prereq: 668.03.

**668.05 Clinic 5 G 4**

Refinement of curriculum development skills and the development of leadership and human relations skills required by employed, one-year certified vocational teachers.

5 8-hr cl for two wks. Prereq: 668.04.

**668.06 Clinic 6 G 1**

Development and refinement of basic curriculum design and development skills required of a second-year vocational teacher.

1-hr clinical. Prereq: 668.05.



**669 Teaching Students with Disabilities in Inclusive Settings**  
U G 3

Emphasizes practical, low-cost, empirically supported, and classroom tested approaches to teach students with disabilities effectively in general education classrooms.

1 2.5-hr cl. Prereq: Permission of instructor. Not open to students with credit for Ed-S&R 665.

**672 Adult Learning in Society** U G 3

Nature, extent, and significance of adult learning in society. History, forms, methodologies, theoretical issues, and philosophies.

Prereq: 4th yr standing, EDU majors.

**673 Parent Education** U G 3

Nature, extent, and significance of the parent education movement; home and school relationships; methods and resources; training professionals and lay leaders; local and state programs.

1 2.5-hr cl. Prereq: 4th yr standing; for EDU majors.

**674 Continuing Education in the Retirement Years** U G 3

Designed to provide knowledge about older adults' learning needs, available resources, and pertinent legislation; emphasis on helping older learners contribute positively to society.

1 2.5-hr cl. Prereq: Permission of instructor for undergrads.

**676 Programming for Severe Physical Impairments** U G 3

Background information and survey of programmatic considerations related to physical, motor, and fitness training of the severely handicapped.

1 2.5-hr cl.

**677 The Parent/Professional Partnership** U G 3

Knowledge and skills necessary for educators to assist parents in facilitating the development, education, and socialization of children and youth and handicaps.

1 2.5-hr cl. Prereq: Permission of instructor. Open only to special education majors; others by permission of instructor.

**681 Advanced Athletic Training** U G 3

Orthopedic evaluation of musculoskeletal athletic injuries; the theory and interpretation of assessment techniques and their application in the field of Sports Medicine.

2-hr lecture, 2-hr lab. Prereq: 661 and permission of instructor.

**685 Adult Exercise Program - Implementation** U G 3

Introduction to adult exercise training and evaluation methods; emphasis on the implementation of programs for the normal healthy adult.

3 cl. Prereq: 380 or 414. To be taken concurrently with 660.01.

**686 Exercise Training for Fitness and Cardiac Rehabilitation**  
U G 3

Continuation of 685; exercise testing for special populations; cardiac rehabilitation procedures; preventive exercise training programs.

3 cl. Prereq: 685.

**692 Workshops**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Cl hrs arr. Prereq: Written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**692.20 Sport and Exercise Sciences** U G 1-8

Repeatable to a maximum of 12 cr hrs.

**692.25 Rehabilitation Services** U G 1-8

Repeatable to a maximum of 12 cr hrs.

**692.34 Counselor Education** U G 1-8

Repeatable to a maximum of 12 cr hrs.

**692.40 Workforce Development and Education** U G 1-8

Repeatable to a maximum of 12 cr hrs.

**692.63 School Psychology** U G 1-8

Repeatable to a maximum of 12 cr hrs.

**693 Individual Studies**

Prereq: Permission of instructor. A total of not more than 30 cr hrs of any 693 will apply toward graduation for undergrad students. For plan A, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree; for Plan B, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree.

**693.10 Special Education** U G 1-4

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.20 Sport and Exercise Sciences** U G 1-4

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.25 Rehabilitation Services** U G 1-4

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.34 Counselor Education** U G 1-4

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.40 Workforce Development and Education** U G 1-4

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.63 School Psychology** U G 1-4

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies**

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed T&L 694.

**694.10 Special Education** U G 1-5

Repeatable to a maximum of 20 cr hrs.

**694.20 Sport and Exercise Sciences** U G 1-5

Repeatable to a maximum of 20 cr hrs.

**694.25 Rehabilitation Services** U G 1-5

Repeatable to a maximum of 20 cr hrs.

**694.34 Counselor Education** U G 1-5

Repeatable to a maximum of 20 cr hrs.

**694.40 Workforce Development and Education** U G 1-5

Repeatable to a maximum of 20 cr hrs.

**694.63 School Psychology** U G 1-5

Repeatable to a maximum of 20 cr hrs.

**697 Foreign Study** U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that experience.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 12 cr hrs. This is a Progress course. Repeatable not more than 4 workshops, including hrs earned in HPER 697. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic** U G 1-15

Repeatable.

**698.02 Foreign** U G 1-15

Repeatable.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in Ed Policy & Leadership, Ed-Teaching & Learning.

**700.01 Seminar of Interprofessional Care** U G 3

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

**700.02 Changing Societal Values** U G 3

Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.

**700.03 Seminar on Ethical Issues Common to the Helping Professions** U G 3

Ethical issues of concern to the professions and arising out of advanced technology, euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.

**700.04 Interprofessional Practicum in Clinical Settings** U G 3,5

Interprofessional teamwork in clinical settings.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**700.05 Interprofessional Seminar in Policy Analysis** U G 3

Explores interprofessionally to history, formation, and implementation of public policy issues of significance to seven helping professions.

3 cl. Prereq: Permission of instructor.

**700.06 Care of Chemically Dependent Families** U G 3

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

**700.07 Interprofessional Approaches to Child Abuse and Neglect** U G 3

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

1 2.5-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**702 Health After 60** U G 3

Designed to develop an awareness of the health concerns of the elderly and a willingness to help improve their quality of life.

1 3-hr cl. Prereq: 4th yr standing in a health science or behavioral science area or permission of instructor.

**703 Health Behavior Change in Adulthood and Later Years U G 3**

Review of research on changing health behavior; includes smoking cessation, weight control, hypertension, stress, health promotion programs, and changing health behavior after 65.

1 2.5-hr cl. Prereq: BS or BA degree in hlth edu or related field; advanced grad standing. Not open to students with credit for HPER 816.

**704 Evaluation in Health Education U G 3**

Identification and application of various techniques for evaluating learning processes and programs in health education.

3 hrs arr.

**705 Teaching Gifted Students-Educational and Psychological Approaches G 3**

An examination of historical trends, educational, psychological, and philosophical factors in the education of gifted persons.

1 2.5-hr cl. Prereq: 650 or permission of the instructor. Open only to special education majors; others by permission of instructor.

**706 Professional Transition to Teaching in Physical Education G 2**

Curricular issues and concerns related to the demands of an intern beginning the transition to teaching; teachers' rights and responsibilities.

1 2-hr cl. Prereq: Admission to M.Ed. program.

**707 Professional Issues for Prospective Physical Educators G 2**

Alternative models of education and critiques existing in P.E. programs; impact of social issues on teachers' professional lives.

1 2-hr cl. Prereq: 706, 740, and 786.

**708 Analysis of Teaching and Learning Processes G 3**

Techniques for defining, observing, and assessing teaching/learning processes with emphasis on verifying relationships between teaching strategies and student outcomes.

2 1.5-hr cl. Prereq: Admission to M.Ed. program. Not open to students with credit for 871.

**709 Curriculum and Instructional Design G 3**

Systematic planning and design of the curriculum and its implementation using principles of instructional design and evaluation.

2 1.5-hr cl. Prereq: Admission to M.Ed. program.

**710 Management of Sport and Special Events G 3**

Provides a comprehensive knowledge of the planning and management of sport and special events.

1 2.5 hr cl.

**712 Early Intervention for Children with Disabilities U G 3**

Study of education of infants and preschool children with disabilities emphasizing model programs with an interdisciplinary focus.

1 2-hr cl. 2-hr field-based experience. Prereq: An introductory course in special ed (251, 651, or equiv), a course in child dev (Fm&HuDv361), or the family (Fm&HuDv 360, Sociol 430, or equiv). Not open to students with credit for Ed-S&R 712. Open only to special education majors; others by permission of instructor.

**714 Responses and Adaptations to Exercise U G 5**

Study of responses and adaptations to the stress of exercise in humans and animals.

5 cl. Prereq: 10 cr hrs physiol or 10 cr hrs chem or 10 cr hrs biology, or equiv.

**715 Education of Students with Physical, Sensory, and Multiple Disabilities U G 3**

Study of the education and habilitation of children and adults with physical, sensory, or multiple disabilities including individuals with severe and profound retardation and autistic-like characteristics.

1 2.5-hr cl. Prereq: 251 or 650 or equiv. Open only to special education majors; others by permission of instructor.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Human Development and Family Science, Human Nutrition and Food Management, Nursing, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children U G 3**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.

1 3-hr cl. Not open to students with credit in 717.01 in any cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues U G 3**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

1 2-hr cl. Not open to students with credit in 717.02 in any cross-listed areas.

**717.03 Developmental Disabilities G 3**

Focus on the most pertinent scientific and societal issues of developmental disabilities.

1 3-hr cl. Not open to students with credit for 717.03 in any cross-listed areas.

**718 Education of Mildly-Disabled Children and Adults U G 3**

Overview of problems, issues, and practices in educating children and adults with developmental, learning, and behavior disabilities.

1 2.5-hr cl. Open only to special education majors; others by permission of instructor.

**719 Early Intervention Interdisciplinary Team Dynamics G 3**

Interdisciplinary team-taught course with a focus on early intervention/early education services for children birth to three and their families.

2.5-hr cl. Prereq: Permission of instructor. Not open to students with credit for Alli Med 719, HDFS 719, Nursing 719, or Sph/Hrng 719. Cross-listed in Allied Medicine, Human Development and Family Science, Nursing, and Speech and Hearing Science.

**723 Elementary School Physical Education G 2**

Methods and materials of elementary school physical education dealing with the selection, instruction, and evaluation of elementary physical education activities.

5 4-hr cl for 20 hrs total. Prereq: Admission into the Early-middle Childhood Education M.Ed. program.

**724 Elementary School Health Education G 3**

Health appraisal of the school aged child and teaching methods dealing with instruction and evaluation of Health Education.

10 3-hr sessions for a total of 30 hrs. Prereq: Grad standing or permission of instructor. Acceptance to the Early-middle Childhood Education M. Ed. program.

**726 Changing Physical Activity Behavior G 3**

Introduction to the theoretical foundations, research base, and intervention strategies for enhancing exercise participation in fitness and recreational settings.

1 2.5-hr cl.

**727 Special Topics in Education**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Prereq: Grad standing or registration in one of the professional schools.

**727.10 Special Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.20 Sport and Exercise Sciences P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.25 Rehabilitation Services P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.34 Counselor Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.40 Workforce Development and Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.63 School Psychology P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**728 Cultural Diversity: Developing a Multicultural Perspective G 3**

Students will have the opportunity to develop a multicultural awareness as they explore the impact of an increasingly diverse society in the United States.

1 2.5-hr cl. Prereq: Grad level status and permission of instructor.

**732 Current Topics in Sport and Exercise Management G 2**

Examines the areas of specialization within sport management and current issues relative to the field.

1 2-hr cl. Prereq: Permission of instructor or enrollment in sport and exercise sciences.

**733 Financing Sport Operations G 3**

This course examines the application of basic concepts of public and private sector financing to collegiate and professional sport organizations.

2 1.5-hr cl. Prereq: Sport Management major or permission of instructor.

**740 Teaching Physical Education in the Elementary School G 5**  
Effective strategies for teaching physical education in the elementary school.  
4-hrs cl for the first 15 days of the qtr. Prereq: Admission to the M.Ed. certification program.

**741 Teaching Physical Education in Middle and High School G 5**  
Teaching and curricular issues as they relate to middle and high school physical education programming.  
4 hrs daily for 15 days. Prereq: 706, 740, and 786.

**742 Applied Behavior Analysis for Teachers U G 3**  
Study of principles of behavior for the development and maintenance of academic and social behaviors.  
1 2.5 hr cl.

**743 Educational Assessment of Exceptional Learners U G 3**  
Examination of issues and procedures associated with planning, conducting, scoring, and interpreting educational assessments.  
1 2.5-hr cl. Prereq: 251 and 650 or equiv. Open only to special education majors; others by permission of instructor.

**746 Behavioral Consultation in School, Clinic, and Home Settings U G 3**  
Focuses on providing behavioral consultation to regular and special education teachers, administrators, students, and parents; analyses the development, implementation, and evaluation of consultation programs in school, clinics, and home settings.  
1 2.5 hr cl. Open only to special education majors; others by permission of instructor.

**750 Teaching Social Behavior to Students with Disabilities U G 3**  
Nature of social skills, importance of social skills planning in the curriculum, and the special social-skill needs of learners with disabilities.  
1 2.5-hr cl. Prereq: Permission of instructor. Open only to special education majors; others by permission of instructor.

**754 Physical Growth and Motor Development U G 3**  
Study of growth in phylogenetic and ontogenetic sequence; motor development; critical analysis of research in motor ability, fitness, and athletics, as related to growth and development.  
3 cl. Prereq: Grad standing, or permission of instructor.

**755 Inclusion in Sport and Exercise Education G 3**  
Designed to familiarize teachers and other professionals with inclusion/integration in Sport and Exercise Education.  
1 3-hr cl. Prereq: 544 or equiv. Required for grad students in Sport and Exercise Education.

**757 Aspects of Human Resource Development in Workforce Education G 3**  
Frameworks and practices related to human resource development in workforce education.  
1 2.5-hr cl.

**762 Motor and Physical Assessment of Children with Handicapping Conditions U G 3**  
Survey of validity data on the most used assessment tools and practices in collecting motor and physical performance data on children with handicapping conditions.  
1 3-hr cl. Prereq: 650, and 662 or Ed S/R 651.

**765 Grant Writing G 3**  
Analysis of how applications for external funding in the School of PAES are developed and submitted.  
1 3-hr cl. Prereq: Permission of instructor.

**767 Assessment in Counseling: Instrumentation U G 3**  
An introduction to the concepts and techniques in the appraisal of the individual with an emphasis on basic statistical concepts, and an overview of the instrumentation; designed for counselors who will be working in school, mental health, and rehabilitation settings.  
1 2.5-hr cl. Prereq: 773 or permission of instructor.

**768 Assessment in Counseling: Interpretation U G 3**  
A continuation of 767 involving a more advanced study of concepts and techniques in the appraisal of the individual with an emphasis on the development of case studies, and interpretation of standardized and non-standardized assessment instruments; designed for counselors who will be working in school, mental health, and rehabilitation settings.  
1 2.5-hr cl. Prereq: 767.

**773 Counseling Services and Techniques U G 3**  
Counseling services and techniques used to help individuals live and work effectively in a complex society.  
1 2.5-hr cl.

**774 Introduction to Counseling U G 3**  
Introduction to counseling theories with emphasis on theoretical bases and applications in selected school and community settings.  
2 2.5-hr cl. Prereq: 773.

**775 Group Counseling U G 3**  
An overview of theories, issues, and trends of group counseling.  
1 2.5-hr cl. Prereq: Permission of instructor.

**776 Counseling Children U G 3**  
An overview of child behavior and concerns with emphasis on counseling theory as applied to children and general treatment modalities.  
1 2.5-hr cl.

**779 Educational and Career Counseling U G 5**  
Theories, instruments, and resources for educational and career counseling of individuals and groups.  
1 2.5-hr cl, 1 2-hr lab. 20 clinical hrs. Prereq: 768 and written permission of instructor.

**785 Organization and Administration of Public Recreation U G 3**  
Consideration of common patterns of organization of community recreation found in American cities, large and small, under municipal, school, and other auspices.  
2 1.5-hr cl. Prereq: 245, 545; Edu PAES major or permission of instructor. Sr standing or above.

**786 Internship in Physical Education at the Elementary School G 4,8**  
Observation, participation, and responsible teaching in an elementary school setting.  
3-6 hrs daily over 40 days. Prereq: 740 and admission to the M.Ed. program.

**787 Internship in Secondary Physical Education G 4,8**  
Observation, analysis, and teaching in a public secondary school; dual and three-way conferences with supervisor and cooperating teacher.  
Au, Wi, Sp Qtrs. 3-6 hrs daily over 40 days. Prereq: 706 and 786. M.Ed. standing or by permission of the instructor.

**788 Practicum for School Nurses U G 3-15**  
A supervised opportunity is provided to practice the school nursing specialty in a public school health services setting.  
1 conf per wk; hrs of field exp varies with cr hrs. Prereq: Written permission of area advisor. Limited to student nurses and RN's with courses required for school nurse certification. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**789 Practicum in Health Education U G 2-15**  
Opportunity is provided for putting educational research and theory into practice by teaching, administration, and agency experience under supervision in university, school, and agency situations.  
1 arr conf and arr field exp. Prereq: Written permission of instructor and departmental adviser based upon submitted evidence of appropriate knowledge and skill in the selected course. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**790 Principles and Practices of Rehabilitation Counseling U G 3**  
Orientation to the vocational rehabilitation process; a survey of principles, history, philosophies, legislation, and techniques.  
1 2.5-hr cl. Prereq: Permission of instructor.

**791 Orientation to Disabling Conditions U G 3**  
An overview of major disabling conditions focusing on: etiology, treatment, and prognosis; physical restoration; the vocational and functional limitations created by the conditions.  
1 2.5-hr cl. Prereq: Permission of instructor.

**792 Job Placement and Job Development for Persons with Disabilities U G 3**  
An analysis of the theories and techniques involved in vocational counseling, job restructuring, and job development with the disabled worker; an introduction to models of interagency linkage and cooperation.  
1 2.5-hr cl. Prereq: 790 or permission of instructor

**795 Multicultural Perspectives in Teaching Sport and Physical Activity Classes G 3**  
Designed for students to develop a multicultural perspective in understanding the teaching-learning process; especially in sport and physical activity classes.  
22-hr cl. Prereq: Grad standing in Sport and Exercise Sciences. Recommended for all new GTA's in Sport and Exercise Sciences.

**800 Counseling: Practica in Basic Helping Skills**  
Provides the experiential component of 774: Introduction to Counseling and 775: Group Process.  
1 2-hr cl.

**800.01 Individual Counseling G 2**

Intensive training in basic interviewing and counseling skills with a focus on self-assessment, and on increasing one's understanding of the complexities of interpersonal processes.

Prereq: 774 or equiv and/or permission of instructor. This course is graded S/U.

**800.02 Group Counseling G 2**

An opportunity to experience the group process from a member's perspective, and to observe the role and function of a group facilitator.

Prereq: 775 or equiv and/or permission of instructor. This course is graded S/U.

**801 Multiculturalism and Counseling**

Explores cultural-specific issues and their impact on counseling.

**801.01 Multicultural Issues in Counseling G 3**

An exploration of multicultural concerns related to the knowledge, belief/attitudes, and skills of counselors.

Prereq: 774 or permission of instructor.

**801.02 Multicultural Research in Counseling G 3**

An examination of multicultural research design and methodology, and the impact these findings have on counseling.

Prereq: ED P&L785 and/or ED P&L 786 or their equivalents and 801.01 or equiv.

**802 Exercise Physiology****802.01\* Introduction to Exercise Physiology G 4**

Introduction to the field of exercise physiology with emphasis on energy liberation factors affecting performance, health, and fitness and physical training.

2 2-hr cl. Prereq: Physiol 602 or equiv.

**802.02 Exercise Physiology: Metabolism, Temperature, Water, and Electrolyte Balances G 4**

Continuation of 802.01; discussion of metabolism, temperature, water, and electrolyte balances during exercise and of the effects of physical training.

2 2-hr cl. Prereq: 802.01 and permission of instructor.

**802.03\* Exercise Physiology: Cardio-respiratory System, Physical Training, and Muscular Strength Training G 4**

Continuation of 802.02; discussion of cardio-respiratory system during exercise and effects of physical training.

2 2-hr cl. Prereq: 802.02 and permission of instructor.

**802.04\* Muscle Structure and Function: Overload and Disuse G 4**

Muscle structure and function as related to normal physiology, overload, disuse, and exercise.

2 2-hr cl. Prereq: 802.01; Physiol 602 or permission of instructor. Limited to 10 students.

**803 Improvement of Instruction in Basic Business Subjects G 3**

A study of objectives, methods, materials, and methods of evaluation for courses such as general business, consumer education, and business law.

1 2.5-hr cl. Not open to students with credit for Ed-STDS 803.

**805 Teaching the Gifted: Instructional and Curricular Adaptions G 4**

Information and skills for modifying curriculum for gifted presented in a workshop format.

1 2.5-hr cl, 2 hrs practica/wk. Prereq: 705. Open only to special education majors; others by permission of instructor.

**806 Sport Management and Administration G 3**

The various aspects of athletic, intramural, and recreation administration.

2 1.5-hr cl. Prereq: At least 2 qtrs in sports administration program or phys ed PhD candidate with minor area of athletic administration.

**807 Legal Issues Affecting Sport G 3**

A study of legal issues affecting the delivery of sport services; focus on liability in sport activities.

2 1.5-hour cl.

**808 Effective Management of Sport Delivery Systems G 3**

Application of contemporary management techniques used in the design and operation of sport delivery systems.

2 1.5-hr cl. Prereq: 3 hrs of management sci, 806, or permission of instructor.

**809 Sport Marketing G 3**

Examination and utilization of basic marketing principles in the areas of sport (collegiate and professional) recreation.

2 1.5-hr cl. Prereq: Bus-Mktg 650.

**811 Occupational Analysis G 3**

Development and utilization of procedures used in analyzing a technical occupation for teaching content.

3 cl. arr field experience. Not open to students with credit for 657 or Ed-STDS 657.

**812 Educational Assessment for Children with Disabilities G 3**

Strategies for educational assessment of the behavior of infants and preschoolers with disabilities, with emphasis on instructional program planning.

12.5-hr cl. Prereq: 251, 650 or equiv; and 712. Open only to special education majors; others by permission of instructor.

**813 Instructional Programming in Early Childhood Special Education G 3**

Methods for development of language/communication, sensorimotor, cognitive, social, and motor skills.

12.5-hr cl. Prereq: 251, 650 or equiv; and 712. Open only to special education majors; others by permission of instructor.

**814 Inclusion for Young Children with Disabilities G 3**

This seminar will provide an in-depth study of diverse factors which influence the inclusion of young children with disabilities in educational and community settings.

1 2.5-hr cl. Prereq: 712 or Ed-S&R 712. Open only to special education majors; others by permission of instructor.

**817 Developing Instruction for Business and Industry G 3**

The systematic development of instructional programs for business and industry; role of the instructional developer in business and industry will also be examined.

1 2.5-hr cl. Prereq: permission of instructor. Not open to students with credit for 660 or Ed-Stds 660.

**818 Designing Individualized Training Systems G 3**

The design of individualized training and performance systems for business, and industry.

1 2.5-hr cl. Not open to students with credit for Ed Stds 670.

**825 Principles and Programming for Persons Who are Severely or Multiply Disabled G 3**

Includes transdisciplinary focus, community-based curriculum, integration with nondisabled peers, and nonvocal communication.

1 3-hr cl. Prereq: A course in educational programming for children with low-incidence disabilities, and a course in language development and permission of instructor. Open only to special education majors; others by permission of instructor.

**826 New and Emerging Assistive Technologies for Individuals with Disabilities G 3**

Interdisciplinary course covering applications of technology to meet the functional needs of individuals in mobility, manipulation, communication, and cognition and learning.

1 2.5-hr cl Lec/lab. Not open to students with credit for Alli Med 802. Open only to special education majors; others by permission of instructor. Cross-listed with Alli Med 802.

**828 Administrative Practices in Vocational Education G 3**

A study of the concepts of vocational education program administration, including management skills, policy development, staff management, finance, and program evaluation.

1 2.5-hr cl. Not open to students with credit for Agr Educ 811 or 821, Ed-Stds 821. Cross-listed in Agr Educ 821.

**829 Advanced Educational Procedures for Students with Mild/Moderate Disabilities G 3**

Advanced study of individualized methods of instruction for students with mild/moderate disabilities; emphasis on assessment and design of appropriate instructional programs.

1 3-hr cl. To be taken concurrently with 3 cr hrs of 884.10. Open only to special education majors; others by permission of instructor.

**830 Strategies for Effective Individual Instruction G 3**

Advanced study of precision teaching as a methodology for the systematic evaluation of learning and use in all instructional tactics and curricula.

1 3-hr cl. Prereq: Permission of instructor. Open only to special education majors; others by permission of instructor.

**831 Strategies for Effective Group Instruction G 3**

Study of theory, research, and literature on strategies and tactics of group instruction.

1 3-hr cl. Prereq: 742. Open only to special education majors; others by permission of instructor.

**832 Planning and Implementing Instruction for Generalized Outcomes G 3**

Guiding principles, general strategies, and specific tactics for designing instruction that promotes the generality of newly learned skills over time, settings, and response classes.

1 3-hr cl. Prereq: 831. Open only to special education majors; others by permission of instructor.

**833 Advanced Studies in the Education and Management of Students with Severe Behavior Disorders G 3**

Study of most recent research and literature on the education, management, and programming of students with severe behavior disorders.

1 3-hr cl. Prereq: Permission of instructor. Open only to special education majors; others by permission of instructor.

**834 Supervision of Vocational Instruction G 3**

A study of the concepts of vocational education supervision, including leadership styles, improving instruction, and program and personnel evaluation.

1 2.5-hr cl. Prereq: 609 or equiv. Not open to students with credit for Agr Educ 811 or 830, Ed-Stds 830.22, 830.23, 830.29, 830.30. Cross-listed in Agr Educ 830.

**835 Problems in Interscholastic and Intercollegiate (duplicate) Athletics G 3**

The relation of athletics to education; problems of athletic organization; eligibility; finance, current trends, and developments in management and purpose; public relations.

1 2.5-hr cl.

**836 Structures and Processes of Sport Organizations/Associations G 3**

Examines the organizational structures and processes of amateur, intercollegiate, and professional sport organizations/associations.

2 1.5-hr cl.

**838 Vocational Education Program Planning G 3**

A study of the planning, development, management, and evaluation of instructional systems in vocational education programs.

1 2.5-hr cl. Not open to students with credit for Agr Educ 823 or 833, or Ed-Stds 833. Cross-listed in Agr Educ 833.

**840 Instructional Design for Teacher Educators in Physical Education G 3**

Classification and analysis of learner outcomes in activity settings; emphasis on empirical methods for analyzing outcomes and alternatives for achieving outcomes in teacher education programs in physical education.

1 3-hr cl.

**844 Vocational Evaluation and Development G 3**

A study of vocational evaluation, development, and work adjustment materials and practices utilized in educational and rehabilitation settings.

1 2.5-hr cl. Prereq: 790 or permission of instructor. Not open to students with credit for Ed-Stds 844.

**847 Transition from School to Employment and Community Life for Students with Disabilities G 3**

Programming for secondary students to facilitate successful transitions to adult life, including employment, post-secondary education, residential, and community concerns.

1 3-hr cl. Prereq: 650 or equiv and permission of instructor. Open only to special education majors; others by permission of instructor.

**848 Management and Administration of Programs for Exceptional Children G 4**

A review of technology, trends, and issues basic to the management and operation of a special education program with the intention of preparing leadership personnel.

1 3.5-hr cl. Prereq: 650 and grad standing in special education; or written permission of instructor.

**851 Motor Learning G 3**

Critical consideration of research and theory in the acquisition of skill; special attention is given to major trends in the field.

2 1.5-hr cl. Prereq: Psych 600, or permission of instructor.

**855 Contemporary Issues in Recreational Sports Administration G 3**

A study of current issues, management techniques, and programming concepts associated with the administration of campus recreation programs.

2 1.5-hr cl. Prereq: 630 or equiv.

**861 Focus on Behavior Analysis in Education G 3**

Theory and practice of applied behavior analysis as it applies to educational issues.

1 2.5-hr cl. Prereq: MA or PhD; permission of instructor. Open only to special education majors; others by permission of instructor.

**862 Rehabilitation Case Management G 3**

An in-depth analysis of the vocational rehabilitation topics of case management, agency functioning, and the adaptation of counseling models and techniques for use with persons with disabilities.

1 2.5-hr cl. Prereq: 774 and 790.

**864 Reactions and Adjustment to Disability G 3**

A study of individual reactions to various disabling conditions, the adjustment process, cultural norms and expectations, and responses to the rehabilitation process.

1 2.5-hr cl.

**865 Naturalistic Inquiry in Physical Education G 4**

Consideration of design and methods of inquiry for naturalistic field studies in physical education, sport, play, health, and dance; review of research results.

1 2.5-hr cl, 1 hr arr. Prereq: A grad course in research methods.

**867 Biochemical Methods for the Assessment of Human Performance G 4**

Development of laboratory procedures used to evaluate physiological responses and adaptations of blood and muscle to exercise.

2 cl, 3 hrs lab.

**868 Research on Teaching in Physical Education G 3**

Focuses on major issues, methodologies, and significant findings of research on teaching in physical education for the past two decades.

1 3-hr cl.

**869 Research on Teacher Education in Physical Education G 3**

Analysis of the literature on teacher education research and physical education literature in particular.

1 3-hr cl. Prereq: 868 or permission of instructor.

**870 Research on Effective Teaching and Schooling G 3**

Review of research on effective teaching and schooling with emphasis on using knowledge to reflect on ones own teaching.

2 1.5-hr cl.

**871 Behavioral Research Methods in Applied Settings G 3**

Methods of single subject research in educational, clinical, homes, and other applied settings; focus on developing observational design, analysis and interpretation skills.

1 2.5-hr cl. Prereq: 10 hrs of applied behavior analysis, behavior modification or equivs with written permission of instructor. Open only to special education majors; others by permission of instructor.

**872 Advanced Studies in Adapted Physical Education G 3**

Examination and assessment of developmental aspects as they relate to physical and motor performance behavior of children with developmental disabilities, mental retardation, and learning disabilities.

2 1.5-hr cl.

**873 Behavioral Research in Education: Strategies and Tactics G 3**

This course presents advanced graduate students with knowledge of strategies and tactics for scientific and technological experimentation with human behavior.

1 3-hr cl. Prereq: 871 or HPER 871. Open only to special education majors; others by permission of instructor.

**874 Behavioral Research in Education: Critical Analysis and Thematic Extensions G 3**

Completes the 3-course series on behavioral research in education. Recent methodological advances, development of thematic lines of research, and research ethics are key topics.

Prereq: 871 and 873. Open only to special education majors; others by permission of instructor.

**875 Consultation in the Human Services Profession G 3**

The consultation process, models, roles, skills, and outcomes for human services personnel will be addressed; emphasis is placed on extending theoretical and practical knowledge.

1 3-hr cl, and field experience. Prereq: 773, 774, 775, grad standing, and/or permission of instructor.

**876 Organization and Administration of Guidance Services G 3**

The selection, organization, and presentation of guidance materials, including analysis of types of organization, methods of initiating a guidance program, and types of in-service programs.

3 cl. Prereq: 773 or equiv.

**880 Supervision for Teacher Education in Physical Education G 3**

Examines clinical models for supervision in physical education with emphasis on data collection techniques to provide feedback to teaching interns.

1 2.5-hr cl. Prereq: 870.

**881 Planning Facilities for Athletics, Physical Education, and Recreation**

Principles and techniques in determining facility needs, evaluating facilities, planning for new construction, and remodeling the areas and facilities for athletics, physical education, and recreation.

2 1.5-hr cl.

**881.02 Indoor Facilities G 3**

**884 Planned Field Experience**

Planned counseling, supervisory, assessment, or teaching experience in a public school or other human service setting under supervision.

Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs, including cr hrs in ED S&R 884.60.

**884.02 Foreign G 3-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**884.10 Special Education G 3-15**

Repeatable to a maximum of 15 cr hrs.

**884.20 Sport and Exercise Sciences G 3-15**

Repeatable to a maximum of 15 cr hrs.

**884.25 Rehabilitation Services G 3-15**

Repeatable to a maximum of 15 cr hrs.

**884.34 Counselor Education G 3-15**

Repeatable to a maximum of 15 cr hrs.

**884.40 Workforce Development and Education G 3-15**

Repeatable to a maximum of 15 cr hrs.

**884.63 School Psychology G 3-15**

Repeatable to a maximum of 15 cr hrs.

**885 Supervised Teaching in Special Education**

Student teaching for qualified students in the area of special education.

300 field contact hrs/qr. Prereq: Written permission of instructor.

**885.14 Severe Behavior Disabilities G 3-15**

Repeatable to a maximum of 15 cr hrs.

**885.48 Multiple Disabilities G 3-15**

Repeatable to a maximum of 30 cr hrs.

**885.54 Developmental Disabilities G 3-15**

Repeatable to a maximum of 30 cr hrs.

**885.62 Specific Learning Disabilities G 3-15**

Repeatable to a maximum of 30 cr hrs.

**885.66 Gifted G 3-15**

Repeatable to a maximum of 30 cr hrs.

**886 Colloquium in Exercise Science G 1**

Discussion of current research in exercise science.

1 cl. Prereq: Grad standing in HPER or permission of instructor. Required every qtr for registered grad students in exercise science. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**888 Professional Writing/Publishing in Special Education G 3**

Focus on procedures for conceptualizing, preparing, and submitting manuscripts to educational journals and textbook publishers.

1 3-hr cl. Prereq: Full-time PhD students; permission of instructor. Open only to special education majors; others by permission of instructor.

**889 Practicum G 2-15**

Opportunity to put professional theory and research into practice under supervision in University, school and agency settings.

Arr conferences and field experience. Prereq: Permission of instructor and departmental advisor based upon submitted evidence of appropriate knowledge and skill in the selected course. Repeatable to a maximum of 12 cr hrs. Repeatable with not more than 4 workshops, including hrs earned in HPER 889. This course is graded S/U.

**893 Advanced Individual Studies**

Plan A: not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree.

Arr.

**893.10 Special Education G 1-4**

Open only to special education majors; others by permission of instructor. Repeatable. This course is graded S/U.

**893.20 Sport and Exercise Sciences G 1-4**

Repeatable. This course is graded S/U.

**893.25 Rehabilitation Services G 1-4**

Repeatable. This course is graded S/U.

**893.34 Counselor Education G 1-4**

Repeatable. This course is graded S/U.

**893.40 Workforce Development and Education G 1-4**

Repeatable. This course is graded S/U.

**893.63 School Psychology G 1-4**

Repeatable. This course is graded S/U.

**894 Advanced Group Studies**

Advanced group studies on special problems in education.

Prereq: Written permission of instructor.

**894.10 Special Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.20 Sport and Exercise Sciences G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.25 Rehabilitation Services G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.34 Counselor Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.40 Workforce Development and Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.63 School Psychology G 1-5**

Repeatable to a maximum of 20 cr hrs.

**895 Urban Gifted Education G 3**

Focuses on issues in gifted education that are specific to urban settings.

Only open to students enrolled in a graduate program in Education or with permission of instructor.

**896 Social and Emotional Needs of Gifted Students G 3**

Focuses on the social and emotional needs and development of gifted students.

Only open to students enrolled in a graduate program in Education or with permission of instructor.

**925 Seminar**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Research problems in:

**925.10 Special Education G 2-5**

Open only to special education majors; others by permission of instructor. Repeatable.

**925.20 Sport and Exercise Sciences G 2-5**

Repeatable.

**925.25 Rehabilitation Services G 2-5**

Repeatable.

**925.34 Counselor Education G 2-5**

Repeatable.

**925.40 Workforce Development and Education G 2-5**

Repeatable.

**925.63 School Psychology G 2-5**

Repeatable.

**926 Doctoral-level Professional Seminars in Counselor Education**

Doctoral-level professional seminars covering a range of topics in professional counseling with emphasis on new developments in the theory, practice, and research of counseling.

**926.01 Advanced Interventions I: Diagnosis and Intervention in Counseling G 3**

An in-depth exploration of analytical, cognitive, behavioral, and humanistic approaches to the diagnosis and treatment of five major mental and emotional disorders: organic, psychotic, affective, dissociative, and somatoform.

1 2.5-hr cl.

**926.02 Advanced Interventions II: Brief Approaches to Counseling G 3**

An exploration of brief psychodynamic approaches to the diagnosis and treatment of five major mental and emotional disorders: personality, impulse control, anxiety, substance induced and substance use, and psychosexual.

Prereq: 926.01; Psych 860, 866.01, or equiv, and Psych 867.01.

**926.03 Advanced Interventions III: Contemporary Systems of Counseling G 3**

An extensive exploration of the theories and applications of classical and contemporary approaches to counseling; emphasis is placed on the use of hypnosis and sensory imagery approaches to behavioral change.

Prereq: 926.02; Psych 860, 866.01 or equiv, or 867.01.

**926.04 Critical Research Issues in Counselor Education, Supervision, and Practice G 3**

An exploration of critical issues in the principles of research as they apply to school, mental health, and rehabilitation counseling.

Prereq: ED-T&P and/or ED-T&P 786 or their equivalents.

**926.05 Helping Strategies in Career Counseling G 3**

An examination of the skills necessary for individual and group career counseling.

1 2.5-hr cl. Prereq: Psych 884.01, PhD standing or permission of instructor.

**926.06 Legal, Professional, and Ethical Issues in Counseling G 3**

An examination of current legal, professional, and ethical issues in counseling.

Prereq: PhD standing or permission of instructor.

**926.07 Theories of Counselor Supervision G 3**

Knowledge and skills required for counselor supervision with emphasis on generic models, the supervisory relationship, and major theories.

Prereq: PhD standing or permission of instructor.

**926.08 Leadership Roles in Professional Counseling G 3**

An exploration of leadership strategies as applied to human service delivery systems in which counselors function.

Prereq: PhD standing or permission of instructor.

**926.09 Advanced Theory and Intervention of Group Counseling G 3**

Major group counseling theories, the group counseling relationship, and therapeutic factors; professional and ethical issues as well as current research will be covered.

1 2.5-hr cl. Prereq: 774, 775, 800.01, 800.02, 974, 975, or equivs, and permission of instructor.

**927 Family Counseling G 3**

Introduction to basic approaches, concepts, and techniques of family counseling; the relationship between individual group, and family counseling will be considered.

1 2.5-hr cl. Prereq: Permission of instructor.

**928 Substance Use and Abuse Counseling G 3**

Techniques of substance use and abuse counseling emphasizing strengthening of individual and group counseling skills; drugs and their effects on individuals and families will also be covered.

1 2.5-hr cl. Prereq: Permission of instructor.

**931 Theory and Practice of Discussion in Adult Education G 3**

Perspectives of adult learning via discussion; analysis of research on group discussion; principles of discussion oriented adult learning; application of group discussion to problem solving.

1 2.5-hr cl.

**932 Adult Characteristics and Learning Theory G 3**

Examination of significant learning theories and their applicability to adult learning experiences.

1 2.5-hr cl. Prereq: 672 or permission of instructor.

**934 Organization and Administration of G 3**

The administrative functions within adult education agencies: decision making, staff development, financing, evaluating, and improving adult education programs.

1 2.5-hr cl. Prereq: 672 and written permission of instructor.

**935 Program Planning in Adult Education G 3**

Prepares educators to implement components in planning educational programs for adults: assessing needs, setting objectives, selecting and training staff, choosing instructional strategies, promotion, and evaluation.

1 2.5-hr cl. Prereq: 672 or Ed-Stds 672 or equiv.

**951 Organization and Management Theory in Sport and Exercise Management G 3**

Organization and management theory applied to sport organizations.

1 2.5-hr cl. Prereq: Grad standing. Only open to students enrolled in sport and exercise management program.

**952 Selected Topics in Organizational Behavior G 3**

Organizational behavior in sport organizations.

1 2.5-hr cl. Prereq: Grad standing. Only open to students enrolled in sport management program.

**953 Current Research in Sport and Exercise Management G 3**

Current research in sport and exercise management.

1 2.5-hr cl. Prereq: Grad standing. Repeatable to a maximum of 6 cr hrs.

**961 Trends and Issues in Workforce Education and Lifelong Learning G 3**

Salient trends and issues in workforce education and lifelong learning are analyzed. Alternative viewpoints are critiqued. Recommendations are made for scholarship and practice.

Prereq: 672.

**974 Supervised Practice in Individual Counseling: Children G 3**

Counseling techniques unique to elementary age children including play media and conceptualizing the environmental press on the child.

1 2.5-hr cl. Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**975 Supervised Practice in Group Counseling: Children G 3**

Supervision of each enrollee who counsels with a group of children of elementary age in a school or other institutional setting.

1 2.5-hr cl. Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**976 Supervised Practicum in Individual Counseling: Adolescent, Youth, and Adult G 3**

Supervised practice in counseling individual clients of adolescent to adult age; emphasis on developing counseling skills, including: counseling relationship; conceptualizing clients; self-understanding.

1 2.5-hr cl. Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**977 Supervised Practice in Group Counseling: Adolescent, Youth, and Adult G 3**

Supervision of each enrollee who counsels with a group of adolescents, youths or adults in a school or other institutional setting.

1 2.5-hr cl. Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**978 Supervised Field Experience G 3**

Supervised practice in guidance and counseling activities in the work setting; emphasis on the range of activities performed by guidance workers in school and related settings.

1 2.5-hr cl. Rehabilitation Services-100 field contact hrs; Counselor Education-minimum 20-40 field contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**979 Supervised Practicum in Rehabilitation Services G 3**

Faculty-supervised rehabilitation counseling services within an approved rehabilitation agency.

1 2-.52-hr cl and 10 hrs supervised field experience during the qtr. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**981 Developmental Assessment I G 3**

Use of testing and observational techniques in developmental assessment with major emphasis on collecting and evaluating data related to global cognitive and affective functioning.

1 3-hr cl. Prereq: Permission of instructor.

**982 Developmental Assessment II G 3**

Continuation of 981, with emphasis on the techniques developed to assess specific abilities and disabilities for educational planning.

1 3-hr cl. Prereq: Permission of instructor.

**983 Developmental Assessment III G 3**

Continuation of 982, with emphasis on the analysis, synthesis, and interpretation of data.

1 3-hr cl. Prereq: Permission of instructor.

**984 Developmental Assessment IV G 3**

Continuation of 983, with emphasis on intervention and the evaluation of intervention techniques.

1 3-hr cl. Prereq: Permission of instructor.

**989 Internship in Sport Management G 9**

Full-time professional development experience at an approved sport worksite setting. Opportunity to apply theory and skills learned in class under direction of on-site supervisor. Internship—350 to 400 hrs. Reading/research/assignments—20hrs.

Prereq: 889 and permission of instructor. This course is graded S/U.

**990 Supervised Practice in Developmental Assessment G 3**

Assessment of limited numbers of children within a school setting and under close supervision, emphasis on global techniques, specific techniques, educational planning, and counseling with children, teachers, and parents. 300 clock hrs over 4-qtr sequence. No clock hrs for 986-990.

Prereq: Permission of instructor; must be taken concurrently with one of the following: 981, 982, 983, or 984. Repeatable to a maximum of 21 cr hrs.

**991 School Psychologist in American Schools G 3**

Overview of trends and issues confronting the professional school psychologist; establishing and maintaining a program of school psychological services.

1 3-hr cl. Prereq: Permission of instructor.

**992 Internship in Child Study G 3,6,9,12**

Professional experiences planned by the student, staff member, and local school supervisor.

1,200 clock hrs for 3-qtr sequence. Prereq: Permission of instructor. Limited to select PhD and post-master's students specializing in school psychology. Repeatable to a maximum of 36 cr hrs.

**995 Doctoral-level Internship in G 3-15**

Supervised internship in professional counseling for doctoral-level students in educational, mental health, or related settings.

Arr. Prereq: PhD standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.



**999 Research**

Research for thesis or dissertation purposes only.

**999.10 Special Education G 1-18**

Repeatable. This course is graded S/U.

**999.20 Sport and Exercise Science G 1-18**

Repeatable. This course is graded S/U.

**999.25 Rehabilitation Services G 1-18**

Repeatable. This course is graded S/U.

**999.34 Counselor Education G 1-18**

Repeatable. This course is graded S/U.

**999.40 Workforce Development and Education G 1-18**

Repeatable. This course is graded S/U.

**999.63 School Psychology G 1-18**

Repeatable. This course is graded S/U.

## Education: Teaching and Learning

Office of Academic Services, 292-2332

333 Arps Hall, 1945 North High Street

The areas of specialization and the courses in the School of Teaching and Learning comprising these areas of specialization are listed below:

**Integrated Teaching and Learning**

289.02, 289.10, 294.10, 294.52, 294.55, 294.58, 294.70, 460.467, 489.10, 489.70, 501, 511, H599, 607, 660, 674, 685, 690, 692.10, 692.50, 692.52, 692.55, 692.58, 692.70, 693.10, 693.50, 693.52, 693.55, 693.58, 693.70, 694.10, 694.50, 694.52, 694.55, 694.58, 694.70, 701, 702, 704, 705, 706, 708, 709, 728, 729, 731, 736, 737, 738, 747, 754, 766, 809, 811, 812, 813, 814, 815, 818, 819, 820, 821, 822, 823, 824, 825, 826, 829, 830, 831, 832, 833, 835, 838, 839, 842, 848, 849, 852, 866, 869, 870, 871, 872, 874, 884.10, 884.50, 884.52, 884.55, 884.58, 884.70, 885.52, 885.55, 885.58, 893.10, 893.50, 893.52, 893.55, 893.58, 893.70, 894.10, 894.50, 894.52, 894.55, 894.58, 894.70, 920, 925.10, 925.50, 925.52, 925.55, 925.58, 925.70, 973, 974, 975, 976, 999.10, 999.50, 999.52, 999.55, 999.58, 999.70.

**Language, Literacy and Culture**

294.28, 294.45, 412, 589, 606, 612, 615, 616, 617, 618, 619.11, 619.12, 624, 633, 634, 638, 639, 640, 642, 643, 645, 646, 647, 648, 656, 665, 670, 671, 697, 698.01, 698.02, 692.25, 692.28, 692.45, 692.56, 693.25, 693.28, 693.45, 693.56, 694.25, 694.28, 694.45, 694.56, 703, 710, 722, 725, 739, 740, 741, 800, 801.01, 801.02, 801.03, 803, 804, 805, 806, 807, 808, 816, 817, 827, 828, 840, 841, 843, 853, 854, 855, 856, 860, 861, 862, 864, 865, 868, 873, 878, 881, 882, 884.25, 884.28, 884.45, 884.56, 893.25, 893.28, 893.45, 893.56, 894.25, 894.28, 894.45, 894.56, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 921, 922, 923, 924, 925.25, 925.28, 928.45, 928.56, 930, 960, 962, 963, 970, 971, 985, 999.25, 999.28, 999.45, 999.56.

**Mathematics, Science and Technology**

120, 220, 221, 222, 224, 225, 227, 228, 231, 232, 235, 236, 243, 250, 255, 310, 355, 489.01, 489.02, 489.03, 489.04, 489.05, 525, 532, 533, 534, 610, 611, 613, 614, 621, 636, 689.01, 689.02, 692.21, 692.23, 692.26, 692.27, 693.21, 692.23, 693.26, 693.27, 694.21, 694.23, 694.26, 694.27, 711.01, 711.02, 711.03, 711.04, 712.01, 712.02, 712.03, 721.01, 721.02, 730, 732, 733, 735, 742, 748, 749, 750, 751, 752, 772, 802.01, 802.02, 802.03, 802.04, 802.05, 802.06, 834, 836, 837, 844, 845, 846, 850, 858, 859, 884.21, 884.23, 884.26, 884.27, 893.21, 893.23, 893.26, 893.27, 894.21, 894.23, 894.26, 894.27, 899, 925.21, 925.23, 925.26, 925.27, 999.21, 999.23, 999.26, 999.27.

**ESL (English as a Second Language)**

020, 021, 022, 023, 104, 105, 106(106G), 107(107G), 108.

**020 Beginning Intensive English as a Second Language U 0**

Intensive instruction in English as a second language for students at a beginning level of proficiency; listening, speaking, structure, reading, and writing.

Su, Au, Wi, Sp Qtrs. 5 5-hr cl. Prereq: Admission to American Language Program and approval of ALP director. Repeatable for 2 qtrs. Repeatable. This is a Progress course. This course is graded S/U.

**021 Elementary Intensive English as a Second Language U 0**

Intensive instruction in English as a second language for students at an elementary level of proficiency; listening, speaking, structure, reading, and writing.

Su, Au, Wi, Sp Qtrs. 5 5-hr cl. Prereq: Admission to American Language Program and approval of ALP director. Repeatable for 2 qtrs. Repeatable. This is a Progress course. This course is graded S/U.

**022 Intermediate Intensive English as a Second Language U 0**

Intensive instruction in English as a second language for students at an intermediate level of proficiency; listening, speaking, structure, reading, and writing.

Su, Au, Wi, Sp Qtrs. 5 5-hr cl. Prereq: Admission to American Language Program, approval of ALP director, and completion of 021 or equiv. Repeatable for 2 qtrs. Repeatable. This is a Progress course. This course is graded S/U.

**023 Advanced Intensive English as a Second Language U 0**

Intensive instruction in English as a second language for students with advanced proficiency; listening, speaking, structure, reading, and writing, with emphasis on English for academic purposes.

Su, Au, Wi, Sp Qtrs. 5 5-hr cl. Prereq: Admission to American Language Program, approval of ALP director and completion of 022 or equiv. Repeatable for 2 qtrs. Repeatable. This is a Progress course. This course is graded S/U.

**104 Basic Spoken English for International Graduate Teaching Associates U 5**

Practice of basic oral and aural English language skills for non-native speakers.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Placement test or recommendation of director. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**105 Classroom English for International Graduate Teaching Associates U 5**

Practice of spoken and pedagogical skills for effective classroom teaching by non-native speaking graduate teaching associates.

Su, Au, Wi, Sp Qtrs. 3 1.5-hr cl. Prereq: Successful completion of 104 and/or SpH/Hrng 035; or placement test; or recommendation of director. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**106 General English as a Second Language U 5**

Review of English structure for non-native speakers of English; major emphasis is on writing, with attention also to development of oral-aural skills.

Su, Au, Wi, Sp Qtrs. 3 1.5-hr cl. Prereq: Placement test or recommendation of director. Not open to students having earned a D or above in 071, 072, or 073. This is a Progress course.

**107 Advanced English as a Second Language U 5**

Reviews advanced English patterns with emphasis on their use in writing essays.

Prereq: Placement test or grade of D or above in 106. Not open to students having earned a D or above in 072 or 073. This is a Progress course.

**108 Academic Writing in English as a Second Language**

Attention given to problems of structure and diction appropriate to extended treatment of abstract topics.

Prereq: Placement test or grade of D or above in 107. Not open to students having earned D or above in 073.

**108.01 Undergraduates U 3**

Idiomatic writing of themes, reports, and examinations. Intended for undergrads.

This is a Progress course.

**108.02 Advanced Undergraduates and Graduates U 3**

Idiomatic writing of reports, examinations, and theses. Intended for advanced undergrad and grad students.

This is a Progress course.

**120 Technology Education Practices and the School U 4**

Studies in technology education; introduction to tools, materials, and processes; study of past, present, and future technology education programs; observation and participation in local schools.

5 2-hr cl and lab.

**220 Design of Constructed and Manufactured Goods U 3**

A study of historical and contemporary design technology as it is applied in the construction and manufacturing industries.

2 2-hr cl and lab. Prereq: En Graph 121.

**221 Manufacturing Practices I U 4**

A study of basic concepts of manufacturing technology through experiences in forming, separating, combining, and assembling materials used in the production of manufactured goods.

5 2-hr cl and lab. Prereq: 120 or 220.

**222 Manufacturing Practices II U 5**

A study of manufacturing management technology, manufacturing production technology, and manufacturing personnel technology through experiences in planning, engineering and production of selected manufactured goods.

5 2-hr cl and lab. Prereq: 221.

**224 Mechanical Systems and Servicing U 4**

Study of energy sources converted to power and techniques necessary for the application of mechanical power systems to servicing mechanical power systems.

5 2-hr cl and lab. Prereq: 120.

**225 Transmitting and Utilizing Mechanical Power U 4**

Study of the selection, installation, operation, and maintenance of mechanical power transmission systems for technological and transportation activities.

5 2-hr cl and lab. Prereq: 224.

**227 Electrical Systems and Servicing U 4**

Study of techniques necessary for the application of electricity to practices used in fabricating and servicing of electrical systems.

5 2-hr cl and lab. Prereq: 120.

**228 Electronic Systems and Servicing U 4**

Study of techniques necessary for the application of electronics to practices used in fabricating and servicing electronic systems.

5 2-hr cl and lab. Prereq: 227.

**231 Construction Practices I U 5**

A study of basic concepts of construction technology through experiences in forming, separating, and combining materials used in the production of residential structures.

5 2-hr cl and lab. Prereq: 120 or 220.

**232 Construction Practices II U 5**

A study of construction management, production, and personnel technologies through real and simulated experiences in the production of constructed goods.

5 2-hr cl and lab. Prereq: 231.

**235 Graphic Reproduction Practices U 4**

An examination of graphic reproduction processes, manipulative skills necessary to teach graphic reproduction processes, and administrative procedures required to operate a graphic arts program.

5 2-hr cl and lab. Prereq: 120; 220.

**236 Printing and Publishing Practices U 4**

An examination of the managed production system utilized in the printing and publishing industry.

5 2-hr cl and lab. Prereq: 235.

**250 Work Experience in Industry U 3-6**

Firsthand study of working conditions, methods, and processes of industry, and their implication for the teaching of technology education.

Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**255 Handicrafts U 4**

Designed to develop skills and knowledge in the use of the common areas of handicrafts such as leather, metals, plastics, wood, and the graphic arts.

5 2-hr cl. Open only to occ ther and sport and leisure studies majors. Repeatable to a maximum of 12 cr hrs.

**289 Field Experience**

Professional service with children or youth in a school or community agency.

Prereq: Permission of instructor.

**289.02 EMCE Exp. in a Community Agency U 2-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**289.10 Elementary Education U 2-5**

Planned elementary education field experience under supervision.

Su Qtr. Prereq: Permission of instructor. Repeatable hrs including 289.02. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**294 Group Studies**

Group studies for students in specialized programs.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**294.10 Elementary Education U 1-5**

Repeatable to a maximum of 15 cr hrs.

**294.28 Social Studies U 1-5**

Repeatable to a maximum of 15 cr hrs.

**294.45 Foreign and Second Language Education U 1-5**

Repeatable to a maximum of 15 cr hrs.

**294.52 Visual Disabilities U 1-5**

Repeatable to a maximum of 15 cr hrs.

**294.55 Hearing Disabilities U 1-5**

Repeatable to a maximum of 15 cr hrs.

**294.58 Orthopedic Disabilities U 1-5**

Repeatable to a maximum of 15 cr hrs.

**294.70 Early Childhood Education U 1-5**

Repeatable to a maximum of 15 cr hrs.

**310 Utilizing Your Learning Power U 5**

Exploration of learning theory and practice, the overlap and integration of theory and practice where critical decisions are made. Off-campus observations.

2 2-hr cl, 1 rec, arr cl.

**355 Custom Production of Manufactured Goods U 4**

Study of custom production planning and processing of industrial goods through experiences in the custom production of selected manufactured goods.

5 2-hr cl and lab. Prereq: 3rd yr standing in major. Not open to students with credit for 255.

**412 Language, Literacy, and Culture U 5**

Exploration of the intersection of oral language, literacy, and culture; examination of language and literacy in its social and political context.

2 2-hr cl, 1 rec.

**460 Elementary Education: Child Guidance U 4**

Designed to develop an understanding of child growth and development principles in relation to instruction.

Lab arr.

**467 Introduction to Children's Literature U 3**

Study of literature for children with emphasis on standards for selecting materials with reference to the interests, needs, and abilities at different age levels.

**489 Advanced Field Experience**

Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings.

100-150 hrs arr. Prereq: Admission to appropriate teacher education program.

**489.01 Middle School Mathematics Education U 3-5**

Repeatable to a maximum of 15 cr hrs.

**489.02 Science Education Elementary School Program U 3-5**

Repeatable to a maximum of 15 cr hrs.

**489.03 Secondary School Mathematics Education U 3-5**

Repeatable to a maximum of 15 cr hrs.

**489.04 Science Education Middle School-Jr. High School Tutorial U 3-5**

Repeatable to a maximum of 15 cr hrs.

**489.05 Science Education Secondary School Science Classes and Laboratories U 3-5**

Repeatable to a maximum of 15 cr hrs.

**489.10 Elementary Education U 3-5**

Repeatable to a maximum of 15 cr hrs.

**489.70 Early Childhood Education. U 3-5**

Repeatable to a maximum of 15 cr hrs.

**501 Kindergarten and Preschool Teaching U 3**

Recent development in the education of young children and its influence on the selection and guidance of appropriate activities.

**511 Elementary Education: Science U 4**

The role of science in childhood education; study of content, methods, materials, and equipment.

Lab arr.

**525 Automation of Production Systems for Technology Educators U 5**

An introduction to robotics and automation, their applications to manufacturing, construction, communication, energy-power, systems, and methods of teaching about them; includes laboratory experiences.

4 2-hr cl. Prereq: 222 and 227.

**589 Laboratory Experiences in English Education U 1-3**

A field-based laboratory designed to provide tutoring, materials development, test construction and evaluation, appraisal, and instructional planning experiences within the English curriculum.

Arr. Repeatable to a maximum of 15 cr hrs.

**H599 Honors Course U 3-5**

A program of accelerated study for students with special aptitudes.

Prereq: Enrollment in the Honors Achievement Program and permission of instructor. Repeatable to a maximum of 15 cr hrs. Graduate non-degree students may need permission for many graduate courses.

**601 Foundations of Middle Childhood Education: Theory, Philosophy, and Organization U G 4**

Examination of the history, rationale, philosophy, organization, and distinctive components fundamental to middle childhood education.

Su, Au, Wi, Sp Qtrs. 1 3.5-hr cl.

**603 Interdisciplinary Teaching and Learning for Middle Childhood U G 5**

Focus on the interrelatedness of the disciplines and the design, implementation, and assessment of curriculum and pedagogy for middle childhood learners.

Su, Au, Wi, Sp Qtrs. 2 2.25-hr cl.

**606 Language Arts in the Bilingual/Multicultural Classroom U G 3**

Research and theories of first and second language acquisition as related to methods of teaching, listening, speaking, reading, and writing in bilingual/multicultural classroom.

1 2.5-hr cl. Prereq: written permission of instructor.

**607 Writing Course in the Elementary Education Major U 5**

Designed to help students reflect critically, both orally and in writing, on the social, political, and cultural contexts that influence education in today's society.

3 1.5-hr cl. Prereq: Admission into the College of Education.

**610 History of Practical Arts and Vocational Education U G 3**

History of those vocational and non-vocational phases of agriculture, business, industry, and homemaking which concern education.

3 cl.

**611 Great Lakes Education Workshop U G 1-4**

Techniques and curricula for presenting interdisciplinary aspects of the oceans and Great Lakes in formal and informal education settings.

10 hrs cl per cr, 1.5 days per cr, 10 4-hr cl. Prereq: Teaching certificate or sr standing. Not open to students with credit for Nat Res 691 or 611 or Educ 727-Sea Grant. Repeatable to a maximum of 5 cr hrs.

**612 Linguistic Materials for Teachers U G 3**

Study of linguistic systems, language acquisition, and sociolinguistics as they bear on the work of classroom teachers.

**613 Methods for Conservation Education U G 3**

Experience centered course for conservation/natural resources education including objectives, instructional, and evaluative procedures appropriate to formal and non-formal settings.

1 3-hr cl. Prereq: Sr or grad standing. Not open to students with credit for or Nat Res 613.

**614 Marine and Aquatic Education U G 3**

Overview of oceanic and Great Lakes resources, their functions in history, climate, commerce, and culture, and the school curriculum.

1 3-hr cl, field trips. Prereq: 20 cr hrs of social, physical, and/or biological sciences or teacher certification, and permission of instructor. Not open to students with credit for Nat Res 614. Travel and subsistence costs for field trips must be borne by students.

**615 Teaching of Modern Foreign Language I U G 4**

Theory and practice of teaching foreign language in beginning classes; use and preparation of instructional materials based on research studies.

2 2-hr cl. Prereq: 289.45.

**616 Teaching of Modern Foreign Language II U G 4**

Study of the use of new instructional materials for intermediate and advanced foreign language classes; teaching of reading, writing, literature, and culture; evaluation.

2 2-hr cl. Prereq: 615.

**617 Teaching of Foreign Languages in the Elementary School U G 4**

Skill development in teaching of spoken and written foreign languages on the elementary school level; construction and use of suitable materials; discussion of issues and problems, evaluation.

Prereq: 15 cr hrs of educ and written permission of instructor.

**618 Teaching of Latin U G 4**

Values, teachers' equipment, objectives, and methods; classroom procedures; lectures and assigned readings.

3 cl, lab arr. Prereq or concur: Latin 201 and 202, and an additional 6 cr hrs in Latin.

**619 Foreign Language Education Residence in Europe**

Practicum in language, language teaching, history, and culture in a foreign country; each student lives with a family, and participates in instruction-related activities and in the study of social and cultural differences.

Prereq: Written permission of instructor; preregistration Repeatable to a maximum of 30 cr hrs.

**619.11 France U G 2-5**

Repeatable to a maximum of 30 cr hrs.

**619.12 Spain U G 2-5**

Repeatable to a maximum of 30 cr hrs.

**621 Teaching Mathematics in Secondary Schools U G 3**

Selected problems in curriculum; evaluation, materials of instruction, and the teaching of specific topics in arithmetic, algebra, and geometry.

2 2-hr cl. Prereq: Admission to M.Ed. or permission of instructor.

**624 Social Education U G 3**

Analyses of social structures and processes in classroom grouping arrangements; teacher social roles, school traditions, ceremonies, clubs, and athletics.

1 2.5-hr cl. Prereq: Permission of instructor or teaching experience.

**633 Teaching and Learning with Drama Pre K-Grade 5 U G 3**

The creative use of drama and story in the classroom.

1 3-hr cl, 1- to 2-hr lab. Prereq: Experienced teacher or sr standing with some field experience.

**634 Theatre in Education U G 5**

Devising and producing interactive performances for students.

Prereq: Theatre 220. Not open to students with credit for Theatre 501 or 565 Offered in cooperation with theatre.

**636 Practicum in Science for Teachers U G 3**

Use and design of apparatus, demonstrations, and experiments for general science, chemistry, biology, and physics, with special emphasis on modern secondary school instructional materials in the sciences.

3 2-hr cl. Prereq: Permission of instructor.

**638 Teaching of Secondary Social Studies I U G 4**

Designed to help future social studies teachers conceptualize social studies and develop understanding of methods and materials for classroom instruction.

2 2-hr cl.

**639 Teaching of Secondary Social Studies II U G 4**

Trends, problems, issues, and instructional strategies in secondary social studies with emphasis on simulations, case studies, the media, role playing, controversial issues, and multicultural education.

2 2-hr cl.

**640 Methods and Techniques of Teaching English to Speakers of Other Languages U G 4**

Study of the use of new instructional materials for intermediate and advanced TESOL classes; teaching of reading, writing, literature, and culture; evaluation.

2 2-hr cl. Prereq: Permission of instructor.

**642 Teaching Reading Across the Curriculum U G 3**

Provides M Ed students with the knowledge and tools they need to support the developmental reading and literacy skills of middle and secondary students.

1 2.5-hr cl. Prereq: Admitted into an M Ed program, Human Ecology major, or permission of instructor. Appropriate for students planning to obtain teacher licensure at the secondary level. Does not substitute for reading core in Early Childhood; Middle Childhood; or Intervention Specialist licensure.

**643 Social Education and Language, Literacy, and Culture G 3**

The relationship of social structures, schooling, and educational issues examined in relationship to the use of language, civic literacy, and culture.

1 2.5-hr cl (lab included). Prereq: Admission to LLC M Ed program.

**644 Teaching and Learning with Drama Grades 4-12 G 3**

The use of drama in the secondary classroom.

1 3-hr cl. Prereq: Experienced teacher or sr standing with some field experience.

**645 Teaching Writing in the Secondary School G 4**

Designed to assist students to understand writing development to develop process-oriented approaches to writing instruction.

22-hr cl. Prereq: Admission to LLC M Ed program. Field experiences required. Requirement for M Ed students in LLC with a specialization in English Education.

**646 Teaching Literature in the Secondary School G 4**

Focus on leading discussions of literature, teaching literature-writing assignments, and using writing to foster literary understanding.

22-hr cl. Prereq: Admission to LLC M Ed program. Field experiences required. Required for M Ed students in LLC with a specialization in English Education.

**647 The Arts and Early Childhood Education G 3**

Students will learn how the arts are integral to early childhood education and how to create integrated contexts for teaching and learning.

**656 Literature for Adolescents U G 3**

Literature for individual, group, and whole-class reading in junior and senior high schools; interest factors, readability, and literary value as criteria for selection; bibliographic aids.

**660 Language Competence of Children and U G 3**

Familiarization of students with the impact of disabling conditions on children and youth's development of language.

1 2.5-hr cl.

**665 Applied Linguistics for Teachers of Reading/Language Arts U G 3**

Structure of language, language acquisition, and language variation applied to language arts/reading principles, methods, and materials.

2 1.5-hr cl.

**668 Reading Foundations U G 4**

Introduction to basic concepts about the reading process, learning to read, social/cultural factors affecting literacy development and effective instruction.

1 3.5-hr cl. Prereq: 467 or 817; jr standing or above.

**669 Understanding Phonics and Its Role in Reading Instruction U G 5**

Detailed examination of how English maps spellings to pronunciations, the role of phonics knowledge in learning to read, and effective assessment and instruction.

1 4.5-hr cl. Prereq: Jr standing or above.

**670 Remedial and Clinical Reading Instruction U G 4**

An overview of theory and practice, including causes, diagnostic procedures, remediation, and instructional materials.

1 3.5-hr cl. Prereq: 668 and 669 or equiv.

**671 Clinical Practice in Treating Reading Disabilities U G 5**

Use of test materials in the diagnosis of reading disabilities; practice with remedial procedures.

1 3.5-hr cl, 3 1-hr lab arr. Prereq: Edu-T&L 739 or 670 and permission of instructor.

**674 Family Participation in Early Childhood School Programs U G 3**

The purposes and importance of family involvement in early childhood school programs, types of programs, resources, methods, and curricula.

**685 Orientation and Mobility for Teachers of Students with Visual Disabilities U G 3**

Readiness activities, assessment procedures, instructional strategies, and direct experience with selected travel techniques for persons with visual disabilities.

**689.01 Middle and Senior High School Mathematics Field Experience U G 6**

Experience in appropriate mathematics classes with an emphasis on acquiring skills to work with students in a school setting while developing skills in preparing, conducting, and evaluating teaching activities.

3-hrs/day for 5 days/wk for 8 wks.

**689.02 Middle and Senior High School Science Field Experience U G 6**

Experience in appropriate school science classes with an emphasis on acquiring skills to work with students in a school setting while developing skills in preparing, conducting, and evaluating teaching activities.

3 hrs/day for 5 days/wk for 8 wks. Prereq: Admission to the post-degree program in science education and concur: 551 or 546. Not open to students with credit for Ed-T&P 689.

**690 Practicum in Problems of Public U G 3**

Group review of specific problems in public education. 3 cl. Open to experienced teachers and administrators. Request to offer practicum must be received by dept in time to allow for planning.

3 cl. Repeatable to a maximum of 9 cr hrs, including cr hrs in Ed-P&L 690. Repeatable to a maximum of 9 cr hrs. Cross-listed in Educational Policy and Leadership. This course is graded S/U.

**692 Workshops**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**692.10 Elementary Education U G 1-8**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**692.21 Technology Education U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.23 Mathematics, Science and Technology Education U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.25 English Education U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.26 Mathematics Education U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.27 Science Education U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.28 Social Studies Education U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.45 Foreign and Second Language Education U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.50 Integrated Teaching and Learning U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.52 Visual Disabilities U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.55 Hearing Disabilities U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.56 Drama, Language Arts, Literature and Reading Education U G 1-8**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**692.58 Orthopedic Disabilities U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.70 Early Childhood Education U G 1-8**

Repeatable to a maximum of 12 cr hrs.

**692.99 WORKSHOP: LANGUAGE, LITERACY AND CULTURE U G 1-18**

Repeatable to a maximum of 12 cr hrs.

**693 Individual Studies**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree.

**693.10 Elementary Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.21 Technology Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.23 Mathematics, Science and Technology Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.25 English Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.26 Mathematics Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.27 Science Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.28 Social Studies Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.45 Foreign and Second Language Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.50 Integrated Teaching and Learning U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.52 Visual Disabilities U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.55 Hearing Disabilities U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.56 Drama, Language Arts, Literature and Reading Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.58 Orthopedic Disabilities U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.70 Early Childhood Education U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.99 INDSTUDIES: LANGUAGE, LITERACY AND CULTURE U G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies**

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs.

**694.10 Elementary Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.21 Technology Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.23 Mathematics, Science and Technology Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.25 English Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.27 Science Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.28 Social Studies Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.45 Foreign and Second Language Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.50 Integrated Teaching and Learning U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.52 Visual Disabilities U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.55 Hearing Disabilities U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.56 Language Arts, Literature and Reading Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.58 Orthopedic Disabilities U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.70 Early Childhood Education U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**694.99 GROUP STUDIES: LANGUAGE, LITERACY AND CULTURE U G 1-5**

Repeatable to a maximum of 20 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable to different titled study tours only.

**698.01 Domestic U G 1-5**

Repeatable.

**698.02 Foreign U G 1-5**

Repeatable.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Cross-listed in Edu-P&amp;L and Edu-PAES

**700.01 Seminar on Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

Repeatable to a maximum of 9 cr hrs.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.

Repeatable to a maximum of 9 cr hrs.

**700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3**

Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.

Repeatable to a maximum of 9 cr hrs.

**700.04 Interprofessional Practicum in Clinical Settings U G 3,5**

Interprofessional teamwork in clinical settings.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

Repeatable to a maximum of 9 cr hrs.

**700.07 Interprofessional Approaches to Child Abuse and Neglect G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

1 2.5-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster. Repeatable to a maximum of 9 cr hrs.

**701 A Survey of Current Research and Trends in Early and Middle Childhood Education U G 3**

Designed to emphasize the appraisal of recent research and its application to teaching practice and educational policy in the area of early and middle childhood education.

1 2.5-hr or 2 1.5-hr cl.

**702 Children's Language and Learning G 3**

Examination of children's oral and written language development and related theoretical understandings instrumental for teaching language arts.

Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: Admission into approved program in College of Education.

**703 Studies in TESOL and Bilingual Education U G 3**

Studies of the theories underlying the teaching and learning of English as a second language and bilingual education: analyses of curricular designs and innovative programs.

1 3-hr cl. Prereq: Jr standing.

**704 Integration of Child Development and Learning Theories G 3**

Focus on how children's behavior and learning develop in education contexts ranging from early childhood through the adolescent years.

21.5-hr cl. Prereq: Admission into approved program in College of Education.

**705 Reading Methods for Early Childhood G 3**

Focus on the acquisition and development of reading skills in early childhood. (Pre-K-3rd grade)

2 1.5-hr cl. Prereq: New Phonics and Reading Foundations Courses.

**706 Language/Literacy II G 3**

Focus on principles and practices for facilitating the effective development and use of oral and written language by children in grades 4-8.

Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 702, and 704, 705.

**708 Teaching and Learning of Mathematics in Grades Pre K-3 G 3**

Examination of instructional strategies that facilitate the teaching and learning of mathematics in grades Pre K-3.

2 1.5-hr cl. Prereq: 702 and 704.

**709 Teaching and Learning of Mathematics for Middle Childhood G 3**

Examination of instructional strategies that facilitate the teaching and learning of mathematics for middle childhood.

2 1.5-hr cl. Prereq: 702, 704, and 708.

**710 Selecting and Developing Second Language Instructional Materials U G 3**

Selection and development of second language instructional materials including theoretical considerations and practical applications; evaluation of instructional materials, creating materials, and adapting materials to student needs.

1 3-hr cl. Prereq: 615 or permission of instructor.

**711 Concepts of School Mathematics**

Organizing concepts of school mathematics, their development through the mathematics curriculum, and their role on the learning of mathematics.

3 cl. Prereq: A course in foundations of math or concur Math 645, grad standing in math educ or math or permission of instructor. Subdivisions intended to be taken in sequence. Subdivisions not repeatable.

**711.01 Functions G 3**

3 cl. Prereq: Permission of instructor.

**711.02 Equivalence G 3**

Prereq: 711.01 or permission of instructor.

**711.03 Measure and Measurement G 3**

Prereq: 711.01, 711.02, or permission of instructor.

**711.04 Variable G 3**

Prereq: 711.01, 711.02, 711.03, or permission of instructor.

**712 Methods of School Mathematics**

Examination of curriculum, instruction, and forces that influence curriculum and instruction in school mathematics, grades 7 through 12.

2 2.5-hr cl. Prereq: Grad standing in math edu or permission of instructor.

**712.01 Introduction to Teaching of Secondary School Mathematics G 3****712.02 Classroom Procedures G 3****712.03 Providing Effective Instruction in Mathematics G 3****721 Logic, Psychology, Learning and Cognition in School Mathematics, Science, and Technology Education****721.01 Logic and Psychology in School Mathematics U G 3**

A study of the nature of psychological growth and the development of logical ability in children and the implications for teaching mathematics.

3 cl. Prereq: Teaching experience or written permission of instructor.

**721.02 Logic and Psychology in School Science U G 3**

A study of the nature of psychological growth and the development of logical ability in children and the implications for teaching science.

3 cl. Prereq: Teaching experience or written permission of instructor.

**721.03 Learning and Cognition in Mathematics, Science, and Technology Education U G 3**

The learning of mathematics, science, and technology education as influenced by cognitive development and the implications of teaching in the middle grades and high school.

**722 Literature Across the Curriculum U G 3**

Non-fiction for ages 4-12 as it contributes to social studies, the sciences, language arts, and the creative arts; emphasis on identifying quality selections and planning related to learning experiences.

1 3-hr cl.

**725 Teaching Advanced Foreign Language Courses U G 3**

The teaching of language skills and aesthetic appreciation in advanced foreign language classes; emphasis on teaching interdisciplinary studies: literature, history, fine arts, music, and architecture.

1 2.5-hr cl. Prereq: At least one French or Spanish course at the 600 level.

**727 Special Topics in Education**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs.

**727.10 Elementary Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.21 Technology Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.23 Mathematics, Science and Technology Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.25 English Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.26 Mathematics Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.27 Science Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.28 Social Studies Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.45 Foreign and Second Language Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.50 Integrated Teaching and Learning P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.52 Visual Disabilities P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.55 Hearing Disabilities P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.56 Drama, Language Arts, Literature and Reading Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.58 Orthopedic Disabilities P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.70 Early Childhood Education P G 1-5**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**728 Analysis of Teaching Young Children U G 3**

Current education and human development theories as they relate to the teaching-learning phenomenon.

1 2.5-hr sem and 1 clinical observation. Prereq: Basic course in child development. Designed for grad students/in-service teachers.

**729 Teaching and Learning of Science in Grades Pre K-3 G 3**

Exploration of contemporary alternatives in elementary science education and the development of knowledge and skills for teaching and learning in grades Pre K-3.

2 1.5-hr cl. Prereq: 702 and 704.

**730 Technological Activities for Teachers of Exceptional Children U G 4**

The application of technological practices in developing instructional materials and activities useful in diagnostic and remediation procedures for exceptional learners.

32-hr cl and lab. Prereq: ED PAES 650 or 718 or equiv with written permission of instructor. Repeatable to a maximum of 8 cr hrs.

**731 Teaching and Learning of Science for Middle Childhood G 3**

Science methods course required for preservice teachers seeking certification to teach at the middle childhood level.

2 1.5-hr cl. Prereq: Admission to Middle Childhood M Ed program.

**732 Teaching Technology Education I G 4**

Study of societal forces and problems attributable to technology education; historical, sociological, and psychological bases of technology education; development of a philosophy of technology education.

2 2-hr cl.

**735 Organization and Administration U G 3**

International and historic background curriculum resources and development, physical organization, administrative organization, supervisory operation, and professional policies.

1 2.5-hr cl.

**736 Integrating Strategies: Teacher Questioning Behavior U G 3**

Designed to analyze and facilitate mastery of question-asking strategies and techniques to improve instruction and the responding patterns of students.

3 cl.

**737 Teaching and Learning of Social Studies in Grades Pre K-3 G 3**

Exploration of current theories in the teaching and learning of social studies in grades Pre K-3.

2 1.5-hr cl. Prereq: 702 and 704.

**738 Teaching and Learning of Social Studies in Middle Childhood G 3**

Study of current theories in the teaching and learning of the historical, ethical, cultural, geographic, economic, and socio-political aspects of social studies in Middle Childhood.

2 1.5-hr cl. Prereq: 702, 704 and 737.

**739 Evaluation and Instructional Decision-Making in Literacy U G 3**

Evaluation processes and instructional materials useful to elementary and secondary teachers are explored as individual and small group needs.

1 3-hr cl. Prereq: 665. Not open to students with credit for ED-T&P 732.

**740 Evaluation Processes and Literacy Learning U G 3**

Designed to examine formal and informal measures, theoretical assumptions, and test construction practices. Course will explore impact of language and cultural diversity on student performance.

1 3-hr cl. Not open to students with credit for ED-T&P 734.

**741 Teacher Decision-Making in Language, Literacy, and Culture: Issues Related to Diversity G 3**

Examines the analysis of literacy learning with culturally and linguistically diverse populations.

1 2.5-hr cl.

**742 Supervision of School Science Programs U G 4**

For those concerned with supervision of teacher education programs in science; objectives, curricula, recent trends, classroom management, evaluation of teaching, and professional literature.

4 cl. Prereq: Teaching experience or permission of instructor.

**747 Curriculum and Instructional Strategies for Students with Physical, Sensory, and Multiple Disabilities U G 3**

Development and adaptation of curriculum, materials, and instructional procedures for teaching students with physical, sensory, and multiple disabilities.

3 cl. Prereq: Permission of instructor.

**748 Teaching Mathematics, Science, and Technology**

Educational theory and its relationship to practice in mathematics, science, and technology education.

2 2-hr cl, including some lab time. Prereq: Admission to the M Ed program or permission of instructor.

**748.01 Introduction to Teaching Mathematics, Science, and Technology G 3**

Study of educational theory and its relationship to practice with a focus on the philosophy, history, and issues in mathematics, science, and technology education.

**748.02 Methods of Integrating Mathematics, Science, and Technology G 3**

Designed for middle and secondary school teachers to increase understanding of issues and trends related to middle and secondary school mathematics, science, and technology education.

**748.03 Reaching All Students in Mathematics, Science, and Technology G 3**

Investigates issues of diversity, equity, management, and assessment in the teaching of integrated Mathematics, Science, and Technology Education.

**749 Fundamental Ideas of School Mathematics G 3**

Development and significance of concepts and processes in school mathematics and their relationship to ideas in other disciplines.

2 2-hr cl, including some lab time. Prereq: Admission to MSAT M Ed or permission of instructor.

**750 Fundamental Ideas of School Technology G 3**

Development and significance of concepts and processes in school technology and their relationship to ideas in other disciplines.

2 2-hr cl, including some lab time. Prereq: Admission to MSAT M Ed or permission of instructor.

**751 Fundamental Ideas of School Science G 3**

Development and significance of concepts and processes in school science and their relationship to ideas in other disciplines.

2 2-hr cl, including some lab time. Prereq: Admission to MSAT M Ed or permission of instructor.

**752 Science in the School Curriculum U G 4**

Foundations for science curriculum; current development, planning, and evaluation procedures, research.

2 2-hr cl. Prereq: Teaching experience or permission of instructor.

**754 Introduction to American Sign Language U G 3**

Introduction to the use of signs and finger spelling in American Sign Language.

1 3-hr cl. Prereq: Written permission of instructor. Not open to students with credit for Ed-S&R 738.

**766 Trends, Issues, and Technological Developments in Teaching Visually Handicapped Students U G 3**

Study of technological research and vocational implications for visually handicapped students; development of basic skills for teaching use of audio, visual, and tactual aids.

1 2.5-hr cl.

**772 Teaching Science in College U G 4**

An examination of college Bachelor's degree, teacher's certificate, and teaching science curricula; teaching methods; student and course evaluation techniques; objectives and rationale for teaching science in general education and teacher education programs.

2 2-hr cl. Prereq: Teaching experience or permission of instructor.

**777 Intermediate Studies in Teaching and Learning with Drama G 3**

Intermediate drama education theoretical principles, activities, and strategies. Su, Au, Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: 633 or 644 or 648 or 666. Repeatable to a maximum of 6 or hrs.

**800 Issues in Language, Literacy, and Culture G 3**

Introduces M Ed students in Language, Literacy, and Culture to key issues underlying their fields of study.

1 2.5-hr cl (lab included). Prereq: Admission to LLC M Ed program.

**801 Teaching Foreign Language at the College Level**

Methods and techniques for teaching foreign language at the college level.

Two wks intensive workshop previous to qtr followed by a 2 hr wkly cl. Prereq: Teaching associate in the Dept of Romance Languages and Literatures or permission of instructor. For students enrolled in these courses, the minimum number of credit hours required for graduation is increased by 5, 10, or 15 hrs.

**801.01 French G 5**

Not open to students with credit for French 801. Cross-listed in French as 801.

**801.02 Italian G 5**

Not open to students with credit for Italian 801. Cross-listed in Italian as 801.

**801.03 Spanish G 5**

Not open to students with credit for Spanish 801. Cross-listed in Spanish as 801.

**802 Processes of School Mathematics**

Processes of school mathematics, their development through the mathematics curriculum, and their role in the teaching and learning of mathematics. Prereq: Grad standing in math ed or math, or permission of instructor.

**802.01 Representations G 2-5****802.02 Examples and Nonexamples G 2-5****802.03 Axiomatics G 2-5****802.04 Problem Solving G 2-5****802.05 Experimentation G 2-5****802.06 Exposition G 2-5****803 Language and Society G 3**

Focus on the history, sociology, and the politics of national policies involving second language throughout the world.

1 2.5-hr cl.

**804 Trends and Issues in Language, Literacy, and Culture G 3**

Current issues such as national standards, multiple literacies, and phonics vs whole language.

1 2.5-hr cl. Prereq: Grad standing. Required core course for LLC MA program of studies.

**805 Global Education: Social Economic Perspectives G 3**

Emphasizes the economic education aspects of global education in global issues, instruction, curriculum, and materials, and the contribution of economic perspectives to global education.

1 3-hr cl. Prereq: Grad standing.

**806 Curriculum Evaluation K-12 Reading Programs G 3**

Application of research, diagnostic, and program and curriculum development in field settings. School-wide evaluation of reading/language arts curricula.

1 3-hr cl. Prereq: Grad standing.

**807 Teaching About Africans and African Perspectives in K-12 Classrooms G 3**

Methods and materials for teaching about African cultures, history and contemporary life through African perspectives and cross-cultural experiential learning.

1 2.5-hr cl.

**808\* Research in Multicultural & Global Education G 3**

Review of research literature in multicultural and global education.

1 2.5-hr cl. Prereq: 881 and 878.

**809 Inclusion: Teaching Children with Physical and Sensory Difficulties P 3**

The philosophical, social, and practice issues about including students with sensory impairments in successful elementary experiences.

1 2.5-hr cl. Prereq: Grad standing.

**810 Classroom Communities and Issues of Guidance G 3**

A classroom as communities framework to support teaching and learning and issues of guidance.

1 2.5-hr cl. Required in Early Childhood MEd and open by permission to other students.

**811 Science in Elementary Education G 3**

Problems of elementary school science instruction with emphasis on pertinent literature and classroom implementation of current developments in science curriculum and methodology.

**812 Mathematics in Elementary Schools G 3**

Applications of research and theory to improve children's competence and problem solving; organization of instructional programs and contemporary instructional questions.

**814 Social Studies in the Elementary School G 3**

The educational values of social studies, reasons for and ways and means of integrating the social sciences with emphasis upon program innovations and research.

**815 Teachers and Teaching: The Changing Context in Equity, Diversity, and Exceptionality G 3**

Examination of how attitudes, assumptions, and expectations within socially diverse classrooms influence the behaviors of educators, parents, and pupils. Case method: Analyzing experiences of teachers. Prereq: Permission of instructor.

1 2.5 hr cl.

**816 Language Arts in the Elementary School G 3**

Problems, research, and current methods of teaching the four major areas of the language arts in the elementary school; listening, speaking, reading, and writing.

1 2.5 hr cl.

**817 Advanced Course in Children's Literature G 3**

An evaluation of the changing role and increased importance of literature in the education of children and youth.

1 2.5 hr cl.

**818 Foundations of Education G 3**

Study of phenomena that undergird or bear on practice in education; topics include the family, learners, teachers and teaching, and schooling.

**819 The Changing American Elementary School G 3**

Investigation of objectives, issues, and curriculum organization of the modern elementary school program.

**820 Developing Early Communication of Children with Physical, Sensory, and Multiple Disabilities G 3**

Knowledge and techniques about functional communication and language acquisition for young children and youth with severe language problems.

1 3-hr cl. Prereq: Permission of instructor. Not open to students with credit for ED S&R 821.

**821 School Problems in Child Development G 3**

Advanced study based upon research in education and related fields which aids the teacher in guiding developmental activities of children in the elementary school.

**822 Developing Language Competence of Students with Hearing Disabilities G 3**

Study of language competence of children with hearing disabilities.

1 3-hr cl. Prereq: 660 or equiv or permission of instructor.

**823 Creative Experiences in the Elementary School Curriculum G 3**

Study of the nature of creativity and aesthetics as related to the elementary school curriculum.



**824 Designing School Programs for Children Age Two to Six G 3**

A study of the characteristics and needs of children two to six years of age as they relate to the development of educational programs.

**825 Methods of Developing Language and Cognition in Early Childhood G 3**

Curriculum methods and materials in developing language and cognition in school programs for children ages three to eight, based upon research findings.

**826 Visual Process and Educational Implications of Visual Disabilities G 3**

Components of vision, anatomy, and physiology of the eye; causes of impaired vision, educational implications of eye disorders, and interpretation of eye specialists' reports.  
1 3-hr cl.

**827 Advanced Study in the Teaching of Developmental Reading G 3**

Designed to provide experienced teachers the opportunity to extend and update their knowledge of the reading process and the principles underlying effective reading instruction.  
1 2.5 hr cl. Prereq: 665.

**828 Trends and Issues in Teaching Reading in the Elementary School G 3**

Designed for experienced teachers and curriculum workers; current developments, trends, and issues critically analyzed according to available research evidence.  
1 2.5 hr cl.

**829 Problems in Elementary School Curriculum and Supervision G 3**

An analysis of the programs and practices involved in facing major curriculum problems in the elementary schools; synthesis of supervision and curriculum.

**830 Early Childhood Education: Multi-Cultural Influences G 3**

A study of early childhood curriculum content and teaching methods as influenced by multi-cultural factors.

**831 Reading for Students with Hearing Disabilities G 3**

Examination of reading theories, research, and implications for students with hearing disabilities.  
1 3-hr cl. Prereq: 822, or its equivs, or permission of instructor. Not open to students with credit for ED S&R 823.

**832 Advanced Studies in Deafness G 3**

Cognitive and psychosocial theories, research, and implications for students with hearing disabilities.  
1 3-hr cl. Prereq: 754 or equiv, or written permission of instructor. Not open to students with credit for ED S&R 824.

**833 Reading and Writing Skills for Teachers of Low Vision and Blind Children G 3**

Modes of written communication for low vision and blind children, focusing on mastery of Grade 2 literary braille for initial reading instruction.  
1 3-hr cl. Prereq: 670 or equiv, and permission of instructor. Not open to student with credit for ED S&R 827.

**834 Planning Technology Education Facilities G 3**

Principles of technology education and technical laboratory planning, including equipment selection for all school levels and meeting all curriculum requirements.  
1 2.5-hr cl.

**835 Modes of Communication and Instructional Materials for Students with Visual Disabilities G 3**

Continuation of modes of communication with focus on mastery of Nemeth Code for science and math notation.  
1 3-hr cl. Prereq: 833. Not open to students with credit for ED S&R 828.

**836 Practicum in Technology Education G 3-5**

Derivation of doctrine; formulation and evaluation of basic programs, curriculum development, organizational implementation, leadership problems, and professional progress, both here and abroad.  
3 cl. Prereq: Secondary (587) student teaching or equiv.

**837 Research in Technology Education G 3**

Identification of research problems and needs; review of research exemplars with critical analysis of research design and procedures.  
3 cl. Prereq: Edu- P&L 785 or 786, or permission of instructor.

**838 Learning Styles G 3**

Education dimensions of learning styles in children and adults related to developmental, neurological, social, and environmental substrates of learning.  
1 3-hr cl. Prereq: Previous teaching experience or permission of instructor. Open to grad students in any field of specialization in education.

**839 Evaluation in Elementary Schools G 3**

Appraisal of materials and methods in terms of educational aims and research findings; consideration of instruments and procedures for comparing achievements with established objectives.

**840 Writing in the Elementary School G 3**

Study of the implications from recent research and theory in language learning and use in respect to writing, spelling, handwriting, and grammar.  
1 2.5-hr cl.

**841 Poetry for Children G 3**

An in-depth study of poetry for children including children's interest in poetry, forms of poetry, and representative poets, classroom approaches for encouraging children's involvement and appreciation of poetry.  
1 2.5-hr cl.

**842 Research in Early Childhood Education G 3**

Exploration of research methods and techniques related to early childhood school programs; review of research in the field; in-depth investigation of interest area.  
Not open to students with credit for ED T&P 826.

**843 Literature for Middle Childhood G 3**

Analysis and study of fiction for children ages 8-12; emphasis on literary quality, strategies for classroom use, and relevant issues.  
1 2.5-hr cl.

**844^ Vocational Evaluation and Development G 3**

A study of vocational evaluation, development, and work adjustment materials and practices utilized in educational and rehabilitation settings.  
1 2.5-hr cl. Prereq: Edu-PAES 790 or permission of instructor. Not open to students with credit for 828 or Edu-PAES 844.

**845 Work Adjustment and Development G 3**

A study of the principles and procedures of work adjustment and development techniques, methods, and resources utilized in educational and rehabilitation settings.  
1 2.5-hr cl. Prereq: 730 or permission of instructor. Not open to students with credit for Edu-PAES 845.

**846 Development of Technology Education Vocational Education Programs for Special Needs and Culturally Diverse Students G 3**

Analysis of educational needs of special needs and culturally diverse learners with emphasis on designing, conducting, and evaluating technology education, vocational, and prevocational programs.  
1 2.5-hr cl. Prereq: 533 or equiv with written permission of instructor. Not open to students with credit for 830.

**848 Understanding Preschool Play G 3**

A study of relevant theories, developmental stages, and research as they relate to developing programs for young children.  
1 3-hr cl. Prereq: Fm&Hu Dv 332 or 662, or permission of instructor.

**849 Observing and Facilitating Preschool Play G 3**

Continuation of 848; extensive analysis of experiences in facilitating preschool play and clinical experience regarding the play of young children.  
1 3-hr cl or field experience. Prereq: 848 or equiv with written permission of instructor.

**850 Experiences in Integrated Content in Mathematics, Science, and Technology Education G 3**

Content, ideas, skills, and applications of mathematics, science, and technology education emphasizing themes and concepts common to two or more of the disciplines.  
2 2-hr cl. Repeatable to a maximum of 9 hrs.

**852 Science and Early Childhood Education G 3**

The nature, scope, and role of science experiences in the learning and development of young children; integration and application of current developments; theory and research in science with early childhood education.  
1 3-hr cl.

**853 Critical Reading in the Content Fields G 3**

Exploration of the problems of developing critical reading ability in a variety of curricular fields.  
1 2.5 hr cl.

**854 Reading in Its Social Setting G 3**

The influence of culture on the nature, quality, and quantity of reading development; the relationship of reading to language development and mass media.  
1 2.5 hr cl.

**856 Advanced Literature for Adolescents G 3**

An evaluation of literature for adolescents and the role it plays in the education of youth.  
1 3-hr cl. Prereq: Teaching experience.

**858 Technology Education in the Elementary School G 3**

Selection, development, and evaluation of typical experience units in both classrooms and practical arts laboratory situations at all levels of the elementary schools.

3 cl. Prereq: 243 or equiv.

**859 Technology Education Curriculum Planning G 3**

Analysis of curriculum research; analysis of instructional materials; application of technology education principles to general education.

1 2.5-hr cl. Prereq: Secondary (587.21) student teaching, or equiv.

**860 Language Arts in the Early Childhood Program G 3**

The process of children's language acquisition leading towards development of reading skills; practical applications from theory and research on language processing.

1 3-hr cl. Prereq: Experience in working with young children or introductory level child development course.

**861 Literature in Early Childhood Education G 3**

Study of literature for children ages two through seven; emphasis on the importance of early exposure to literature for language acquisition and for cognitive and affective development.

1 2.5-hr cl. Prereq: 817.

**862 Roots of Fantasy for Children G 3**

A study of selected works of fantasy for children (grades 4-9) along with their sources in traditional literature; works based on Arthurian legends, the Welsh Mabinogion, and other folklore from the British Isles.

1 2.5-hr cl. Prereq: 817.

**864 Multicultural Literature for Children G 3**

Values and uses of literature by and about Blacks, Asians, Hispanics, Native Americans, and other U.S. ethnic groups: theoretical perspectives, trends, issues, and controversies.

1 2.5-hr cl. Prereq: 817 or equiv.

**865 Reflective Inquiry on Pedagogy with Prospective Teachers G 3**

Prepares prospective teachers to bring an inquiry orientation to their practice and to see reflective inquiry as part of teaching.

1 2.5-hr cl (lab included). Limited to students enrolled in LLC M Ed program. Enables preservice teachers to engage in discipline-specific teacher research as a means for reflecting on practice.

**866 Internship and Reflective Seminar G 10**

Ten-week full-time internship in an elementary school classroom where students assume major teaching responsibilities under the guidance of a cooperating teacher and University supervisor.

Full-time daily: 8:00 a.m.-4:00 p.m. Prereq: Completion of certification courses. This course is graded S/U.

**868 Developing Syllabi for Second-Language Programs G 3**

Focus on various models currently available to second language teachers for syllabus design, development, and evaluation.

2.5-hr cl.

**869 Children's Social Development and the Social World of the Classroom G 3**

Exploration of social growth and social experiences of children, with educational emphasis on the social dimensions of learning and classroom practice.

1 2.5-hr cl. Prereq: Grad standing.

**870 Graduate Studies in Integrated Teaching and Learning G 3**

Designed to introduce the study of integrated teaching and learning, familiarize students with scholars in this field and assist students in planning their masters program.

1 2.5-hr cl. Prereq: Admission into MA program in ITL.

**871 Children's Cognition and the Early and Middle Childhood Classroom G 3**

Emphasis on intellectual development, preschool through adolescence, focusing on educational implications and classroom practice.

1 2.5-hr cl. Prereq: Grad standing.

**872 Approaches to Integrated Curriculum in Pre K-12 Classrooms G 3**

Critical review and application of theories, research, and practices related to integrated curriculum approaches in early childhood, elementary and middle school classrooms.

1 2.5-hr cl. Prereq: 870.

**873 Popular Culture and the Teaching of English G 3**

Analysis of the role of mass media/popular culture in our society; values and themes in popular culture; development of critical skills to analyze popular culture.

1 3-hr cl.

**874 Classroom Based Inquiry in Integrated Teaching and Learning G 3**

Classroom based inquiry strategies considering the literature on classroom based research, models, historical perspectives, ethical questions, and implications for teaching practice.

1 2.5-hr cl

**878 Infusing Global Perspectives in Education G 3**

Rationales, conceptualizations, and strategies for infusing global perspectives in education.

1 3-hr cl.

**881 Theory and Practice in Multicultural Education G 3**

Sensitizes students to cultural diversity, and provides insights and instructional tools for dealing with cultural pluralism in the classroom.

1 2.5-hr cl.

**882 Materials and Methods in the Social Studies G 3**

Study of recent innovations in teaching methodology in the social studies; review and evaluation of recently published teaching materials.

1 2.5-hr cl.

**884 Planned Field Experience**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs.

**884.02 Foreign G 1-15**

Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**884.10 Elementary Education G 1-15**

Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**884.21 Technology Education G 1-20**

Repeatable to a maximum of 25 cr hrs.

**884.23 Mathematics, Science and Technology Education G 1-20**

Repeatable to a maximum of 25 cr hrs.

**884.25 English Education G 1-20**

Repeatable to a maximum of 25 cr hrs.

**884.26 Mathematics Education G 1-15**

Repeatable to a maximum of 25 cr hrs.

**884.27 Science Education G 1-20**

Repeatable to a maximum of 25 cr hrs.

**884.28 Social Studies Education G 1-20**

Repeatable to a maximum of 25 cr hrs.

**884.45 Foreign and Second Language Education G 1-20**

Repeatable to a maximum of 25 cr hrs.

**884.50 Integrated Teaching and Learning G 1-20**

Repeatable to a maximum of 25 cr hrs.

**884.52 Visual disabilities G 3-15**

Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**884.55 Hearing disabilities G 3-15**

Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**884.56 Drama, Language Arts, Literature and Reading Education G 1-15**

Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**884.58 Orthopedic Disabilities G 3-15**

Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**884.70 Early Childhood Education G 1-15**

Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**884.99 PLANNED FLD EXP: LANGUAGE, LITERACY & CULTURE G 1-15**

Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**885 Supervised Teaching in Special Education**

Student teaching for qualified students in the area of special education.

300 field contact hrs/qr. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**885.52 Visual Disabilities G 3-15**

Repeatable to a maximum of 30 cr hrs.

**885.55 Hearing Disabilities G 3-15**

Repeatable to a maximum of 30 cr hrs.

**885.58 Orthopedic Disabilities G 3-15**

Repeatable to a maximum of 30 cr hrs.

**888 Advanced Studies in Teaching and Learning with Drama G 3**

Advanced drama education theoretical principles, activities, and strategies.

Su, Au, Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: 777. Repeatable to a maximum of 6 cr hrs.

**893 Advanced Individual Studies**

Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 893 and/or 899 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U.

**893.10 Elementary Education G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.21 Technology Education G 1-4**

Repeatable. This course is graded S/U.

**893.23 Mathematics, Science and Technology Education G 1-4**

Repeatable. This course is graded S/U.

**893.25 English Education G 1-4**

Repeatable. This course is graded S/U.

**893.26 Mathematics Education G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.27 Science Education G 1-4**

Repeatable. This course is graded S/U.

**893.28 Social Studies Education G 1-4**

Repeatable. This course is graded S/U.

**893.45 Foreign and Second Language Education G 1-4**

Repeatable. This course is graded S/U.

**893.50 Integrated Teaching and Learning G 1-4**

Repeatable. This course is graded S/U.

**893.52 Visual disabilities G 1-4**

Repeatable. This course is graded S/U.

**893.55 Hearing disabilities G 1-4**

Repeatable. This course is graded S/U.

**893.56 Drama, Language Arts, Literature and Reading Education G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.58 Orthopedic Disabilities G 1-4**

Repeatable. This course is graded S/U.

**893.70 Early Childhood Education G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**893.99 ADV IND STD: LANGUAGE, LITERACY AND CULTURE G 1-4**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**894 Advanced Group Studies**

Advanced group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**894.10 Elementary Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.21 Technology Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.23 Mathematics, Science and Technology Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.25 English Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.26 Mathematics Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.27 Science Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.28 Social Studies Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.45 Foreign and Second Language Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.50 Integrated Teaching and Learning G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.52 Visual disabilities G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.55 Hearing disabilities G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.56 Drama, Language Arts, Literature and Reading Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.58 Orthopedic Disabilities G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.70 Early Childhood Education G 1-5**

Repeatable to a maximum of 20 cr hrs.

**894.99 ADV GROUP STD: LANGUAGE, LITERACY AND CULTURE G 1-5**

Repeatable to a maximum of 20 cr hrs.

**899 Interdepartmental Seminar in Teaching College Mathematics G 2-4**

Discussion of problems raised by courses for liberal or general education, service courses, or special education courses commonly offered in college mathematics; given cooperatively by Math and Ed-T&L.

1 3-hr cl. Prereq: Permission of instructor.

**901 Changing Perspectives in Language, Literacy, and Culture G 3**

Introductory seminar highlights interdisciplinary nature of studies in language, literacy, and culture and provides historical perspective for theoretical shifts that influence research and teaching.

1 2.5-hr cl. Prereq: Admission to LLC PhD program. This course is the first of a required three-course sequence for PhD students in LLC.

**902 Multiple Literacies, Technology, and Communities of Learning G 5**

Applies various theoretical perspectives and research tools to explore multiple literacy and technology uses in relationship to community development in different settings.

1 2.5-hr cl, 6 hrs lab. Prereq: 901. Limited to doctoral students. Active e-mail account required. This course is the second of a required three-course sequence for PhD students in LLC.

**903 Teaching/Learning in Language, Literacy, and Culture G 3**

Examines constructivist and sociocultural theories and approaches to teaching and learning. Epistemological roots, historical perspectives and approaches underlying these theories will be examined.

1 2.5-hr cl. Prereq: 901, 902. This course is the third of a required three-course sequence for PhD students in LLC.

**904 Alternative Paradigms for Global Education G 3**

Analysis of the educational implications of basic concepts and propositions about the world derived from alternative approaches to the study of international relations.

1 2.5-hr cl. Prereq: Grad standing.

**905 Research Methodologies in Language, Literacy, and Culture G 3**

Examines recent research in the areas of language, literacy, and culture through a variety of lenses—epistemological, cultural, conceptual and ethical.

1 2.5-hr cl. Prereq: Edu P&L 785 and 800, and admission to LLC PhD program.

**906 Language Learning Across Cultures G 3**

Sociocultural research and theories of first and second language learners; learning of language and literacy across cultures.

1 2.5-hr cl. Prereq: 901, 902, 903. One in a number of general section courses in LLC PhD that provides generic frameworks for courses within the PhD program.

**907 History of Children's and Adolescent Literature G 3**

A seminar focusing on the history of English and American children's and young adult's literature from earliest times to the present century.

1 3-hr cl. Prereq: 817; grad standing.

**908 The Development of Literary Understanding G 3**

Provides background knowledge of the seminal research on children's literary understanding and the theories and perspectives that inform that research.

1 3-hr cl. Prereq: Admission to LLC PhD program or by permission.

**909 History of Theory and Practice in Literacy G 3**

Explores the historical bases of current literacy practices and theoretical perspectives. Examines cultural and political ideologies that have influenced theory, research and instructional practice.

1 3-hr cl.

**910 Creating Effective Contexts for Literacy Learning and Teaching G 3**

Designed to examine the role of social context in cognitive development and theories of learning/teaching and relate them to literacy development in preschool-grade 12.

1 2.5-hr cl.

**911 Research in Emergent Literacy G 3**

Focus on interpreting new research studies in emergent literacy in light of current research.

1 2.5-hr cl. Limited to Advanced MA or PhD students in LLC.

**912 Research in Writing Development and Instruction for Children G 3**

Examination and critical analysis of research on children's writing development and on writing instruction in schools.

1 2.5-hr cl. Limited to Advanced MA or PhD students in LLC.

**913 Research and Theory in Written Composition G 3**

Explores the development of composition as an academic field and how research and theory might shape teaching.

1 3-hr cl. Prereq: Admission to grad program in LLC.

**914 Writing and Learning Across the Curriculum G 3**

Explores research and theory that explains when, why, and how writing can shape thinking and reasoning in the content areas.

1 3-hr cl. Prereq: Admission to grad program in LLC.

**915 Drama in Language, Literacy, and Culture G 3**

Current educational assumptions about language, literacy, and culture are examined and critiqued through the lens of drama education pedagogy.

1 3-hr cl.

**916 Classroom-Oriented Second Language Research G 3**

Classroom research investigates the processes of teaching and learning as they occur in language classrooms.

1 3-hr cl. Prereq: 703.

**917 Issues in Communicative Language Teaching G 3**

Lecture and discussion course focused on current issues related to second language acquisition research.

1 2.5-hr cl. Prereq: 703, 868.

**920 Advanced Concepts in Elementary School Science Education G 3**

Emphasis on functions of leadership personnel in developing and improving elementary school science programs and on evaluation of current developments and research.

Prereq: 811 or permission of instructor.

**921 A Guided Survey of Research in Reading G 3**

Designed to provide acquaintance with scientific studies relating to reading, methods used, results attained, including implications and limitations, and the problems meriting further investigation.

Prereq: 6 cr hrs in grad reading courses. Repeatable to a maximum of 6 cr hrs.

**922 Writing Research Proposals in Language, Literacy, and Culture G 3**

Designed to acquaint PhD students with the practical and conceptual skills needed to design and write research proposals.

1 3-hr cl. Prereq: Edu PAES 785 or 786 or Edu P&L 785 or 786. Repeatable to a maximum of 6 cr hrs.

**923 Literary Theory and Adolescent Literature G 3**

Explores the use of young adult literature for in-depth literary study in secondary classrooms.

1 2.5-hr cl. Prereq: Admission to LLC PhD program. Designed for students in Language, Literacy, and Culture, particularly those with a focus on English Education or children's literature.

**924 Foreign and Second Language Teacher Education G 3**

Foreign and second language teachers will develop a theoretical framework and study critical issues that impact the life-long development of pre- and in-service teachers.

1 3-hr cl.

**925 Seminars**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Research problems:

**925.10 Elementary Education G 2-5**

Repeatable.

**925.21 Technology Education G 2-5**

Repeatable.

**925.23 Mathematics, Science and Technology Education G 2-5**

Repeatable.

**925.25 English Education G 2-5**

Repeatable.

**925.26 Mathematics Education G 2-5**

Repeatable.

**925.27 Science Education G 2-5**

Repeatable.

**925.28 Social Studies Education G 2-5**

Repeatable.

**925.45 Foreign and Second Language Education G 2-5**

Repeatable.

**925.50 Integrated Teaching and Learning G 2-5**

Repeatable to a maximum of 20 cr hrs.

**925.52 Visual disabilities G 2-5**

Repeatable.

**925.55 Hearing disabilities G 2-5**

Repeatable.

**925.56 Drama, Language Arts, Literature and Reading Education G 2-5**

Repeatable.

**925.58 Orthopedic Disabilities G 2-5**

Repeatable.

**925.70 Early Childhood Education G 2-5**

Repeatable.

**930 Literacy Research and Issues of Diversity in the Classroom G 3**

Examines literacy research and diversity issues (language and cultural factors) that influence classroom and school evaluations, instruments and instructional practices.

Prereq: Edu P&L 675.

**960 Analysis of the Reading Process in a Second Language G 5**

Focus on the theoretical and data-based processes of comprehending natural written second language discourse.

2 2-hr cl, 1 hr lab. Prereq: Ed-S&R 785 or equiv.

**962 Seminar in Foreign Language Education G 4**

Analysis of major research studies and projects; evaluation and implications of findings; research considerations unique to foreign language education.

1 3-hr cl; 1 lab arr. Prereq: Written permission of instructor. Not open to students with credit for Ed-T&P 962.

**963 Foreign Language Testing G 4**

Theory and practice of foreign language test construction including item writing, item analysis, reliability, validity, scoring, and interpretation.

2 2-hr cl. Prereq: Permission of instructor.

**970 English Curriculum Language and Composition G 3**

An evaluation of current trends and developments in linguistics and composition instruction and their relevance for the English curriculum.

3 cl.

**971 English Curriculum: Literature G 3**

Critical examination of trends in the secondary school literature program.

**973 Doctoral Proseminar: Integrated Teaching and Learning G 3**

Examines programmatic themes, faculty research interests, and research approaches in Integrated Teaching and Learning. Introduces students to doctoral study.

1 2.5-hr cl.. Prereq: Admission to PhD program.

**974 Sociocultural Aspects of Teaching and Learning in Early and Middle Childhood Education G 3**

Exploration and application of sociocultural perspectives to teaching and learning, curriculum, and classroom life in early and middle childhood education.

1 2.5-hr cl. Prereq: Admission to PhD program.

**975 Multiple Perspectives on Teaching, Learning, and Growth G 3**

Examines educational issues in teaching, learning and growth in early and middle childhood from a range of perspectives, i.e. psychological, sociocultural, and sociopolitical.

1 2.5-hr cl. Prereq: Admission to PhD program.

**976 Diversity and Equity Issues in Teaching and Learning G 3**

Perspectives on how children develop a sense of identity with groups within school and society. Theories used to define diversity in teaching and learning.

1 2.5-hr cl. Prereq: Admission to PhD program.

**985 Theories of Secondary Social Studies Education G 3**

Basic theories of secondary social studies education; discussion of subject-centered, emergent needs, citizenship, reflective, and discipline-oriented approaches.

1 2.5-hr cl. Prereq: Certification in secondary social studies. Admission to doctoral program in secondary social studies.

**999 Research**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs.

**999.10 Elementary Education G 1-18**

Repeatable. This course is graded S/U.

**999.21 Technology Education G 1-18**

Repeatable. This course is graded S/U.

**999.23 Mathematics, Science and Technology Education G 1-18**

Repeatable. This course is graded S/U.

**999.25 English Education G 1-18**

Repeatable. This course is graded S/U.

**999.26 Mathematics Education G 1-18**

Repeatable. This course is graded S/U.

**999.27 Science Education G 1-18**

Repeatable. This course is graded S/U.

**999.28 Social Studies Education G 1-18**

Repeatable. This course is graded S/U.

**999.45 Foreign and Second Language Education G 1-18**

Repeatable. This course is graded S/U.

**999.50 Integrated Teaching and Learning G 1-18**

Repeatable. This course is graded S/U.

**999.52 Visual disabilities G 1-18**

Repeatable. This course is graded S/U.

**999.55 Hearing disabilities G 1-18**

Repeatable. This course is graded S/U. This course is graded S/U.

**999.56 Drama, Language Arts, Literature and Reading Education G 1-18**

Repeatable. This course is graded S/U.

**999.58 Orthopedic Disabilities G 1-18**

Repeatable. This course is graded S/U.

**999.70 Early Childhood Education G 1-18**

Repeatable. This course is graded S/U.

**999.99 RESEARCH: LANGUAGE, LITERACY AND CULTURE G 1-18**

Repeatable. This course is graded S/U.

## Electrical Engineering

205 Dreese Laboratory, 2015 Neil Avenue, 292-2572

**205 Circuit Analysis U 3**

Applications of electrical and computer engineering; circuit fundamentals and analysis; operational amplifiers; phasor analysis; sinusoidal frequency response.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Physics 133, En Graph 167 or Cptr/Inf 201 or Cptr/Inf 221, prereq or concur: Math 415, minimum CPHR of 2.00, and acceptance in Elec & Cptr Eng major or Cptr Science & Eng major. Not open to students with credit for 203.

**206 Switching Circuits Laboratory U 1**

NAND, NOR, XOR gates; combinational circuits; adders; code converters; flip flops; sequential circuits; shift registers; counters.

Su, Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq: 261 or equiv, and acceptance in Elec & Cptr Eng major or Cptr Science and Eng major.

**209 Circuits and Electronics Laboratory U 2**

Circuits and electronics lab covering basic electronics and principles of electrical measurements, signal conditioning, and instrumentation.

Au, Wi, Sp Qtrs. 1 4-hr lab. Prereq: 204 or 205, Math 415, acceptance in Elec & Cptr Eng major, and prereq or concur: 301. Not open to students with credit for 207 or 308.

**261 Introduction to Logic Design U 3**

Introduction to combinational switching theory, Boolean algebra, and clocked sequential networks.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Math 152, Physics 132, En Graph 167 or Cptr/Inf 221 or Cptr/Inf 201, and a minimum CPHR of 2.00.

**265 Introduction to Microprocessor-Based Systems U 3**

Hardware and software organization of a typical microprocessor; machine language programming, interfacing peripheral devices, and input-output programming; real time computer applications, self-paced laboratory included.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 261, and En Graph 167 or Cptr/Inf 221 or Cptr/Inf 201, and prereq or concur: 206, and acceptance in Elec & Cptr Eng major or Cptr Science & Eng major.

**281 Introduction to Electrical Engineering Region IV Computing Facilities U 1**

This course is intended to teach Elec and Cptr Eng students how to use the Region IV computers and attendant software.

Au, Wi, Sp Qtrs. 1 cl. This course is not a requirement in the Elec & Cptr Eng curriculum. This course is graded S/U.

**293 Individual Studies in Electrical and Computer Engineering U 1-15**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

**300 Electrical Circuits U 3**

Introduction to circuit analysis; circuit analysis concepts and their extension to mechanical and thermal systems by analogy; electrical instruments and measurements.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Physics 133, Math 254, minimum CPHR of 2.00, and in Eng college. Not open to Elec & Cptr Eng majors.

**301 Analysis and Design in Circuits and Electronics U 3**

AC power, frequency response and transient analysis; transfer functions and Bode plots; overview of electronics in terms of signals, analog and digital amplifiers; design.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 205, Math 415, and acceptance in Elec & Cptr Eng major. Not open to students with credit for 204 or 305.

**309 Electrical Circuits Laboratory U 1**

Accompanies and complements 300 by demonstrating the physical principles discussed there; use of electrical instruments such as oscilloscopes, voltmeters, ammeters, etc., are also emphasized.

Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq or concur: 300 and minimum CPHR of 2.00. Not open to Elec & Cptr Eng majors.

**311 Electromagnetics I U 3**

Introduction to static electric and magnetic fields, Laplace equation, current, resistance, inductance, capacitance, dielectric and magnetic materials. Maxwell's equations and transmission lines, including impedance matching.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 204 or 205, Math 415, and acceptance as Elec and Cptr Eng major.

**312 Electromagnetics II U 3**

Electromagnetic effects in high speed circuits, propagation, reflection and transmission of plane waves, lossy media and polarization. Introduction to antennas, radar, waveguides and other applications.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 311.

**320 Electronic Devices and Controls U 3**

Theory and applications of electronic devices; study of control circuits, feedback, operational amplifiers, and instrumentation.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 300 or Mech Eng 482, minimum CPHR of 2.00, and in Eng college. Not open to Elec & Cptr Eng majors.

**323 Electronic Analysis, Design and Simulation U 3**

Electronic instrumentation; diode and transistor models for amplifiers and switches; electronics of digital circuits; multiple transistor circuit analysis.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 301 or 321, and acceptance in Elec & Cptr Eng major. Not open to students with credit for 322.

**327 Electronic Devices and Circuits Laboratory I U 2**

Transistor characteristics, large and small signal parameters, transistor bias and amplifier circuits, operational amplifiers, logic circuits, waveform generation.

Su, Au, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq: 308 or 209; and 322 or prereq or concur: 323.

**329 Electronic Devices and Control Laboratory U 1**

Accompanies and complements 320 by demonstrating the principles discussed there; diodes, transistors, operational amplifiers, etc.

Wi Qtr. 1 3-hr lab. Prereq or concur: 320, and minimum CPHR of 2.00. Not open to Elec & Cptr Eng majors.

**331 Introduction to Materials for Electrical Engineering U 3**

Introduction to the interrelation of the structure, properties, and processing of materials, with emphasis on electronic properties.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Chem 121, Math 415, Physics 133, a minimum CPHR of 2.00, and in Eng college.

**341 Energy Conversion U 3**

Overview of energy conversion, with emphasis on the operation of AC and DC machines, and various alternative energy conversion processes.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 204 or 205.

**351 Systems I U 3**

Linear systems and models; time responses using convolution; Fourier series and transform; computer-aided analysis.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 205 or 305.

**352 Systems II U 3**

Laplace transform; frequency response and Bode plots; Z-transforms; state variables, state equations; computer-aided analysis.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 351, and 301 or 305.

**432 Physics of Semiconductor Devices U 3**

Principles of semiconductor devices; theory of excess carriers, photoelectric effects, and diffusion; application to P-N junction, Schottky barrier, bipolar transistor, and field effect transistors.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 331, and prereq or concur: 321 or 323.

**447 Electrical Energy Conversion Laboratory I U 2**

Characteristics of transformers, direct current and alternating current electromechanical energy conversion devices; inspection of power system facilities.

Su, Au, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq: 341.

**481 Professional Aspects of Electrical and Computer Engineering U 1**

History and impact of electrical and computer engineering on society; IEEE code of ethics; professional responsibilities; engineering as social experimentation; safety and risk; case studies; whistle blowing; global awareness.

Au Qtr. 1 cl. This course is graded S/U.

**489 Professional Practice in Industry U 2**

Preparation of a comprehensive report based on actual employment experience in a co-op job in industry. This course may not be used as a technical elective.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to co-op program in Elec and Cptr Eng. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**501 Communication Theory U G 3**

An introductory course in communication theory including both analog and digital modulation concepts and introductory noise concepts.

Au, Wi Qtrs. 3 cl. Prereq: 352; Math 530 or Stat 427. Not open to students with credit for 601.

**508 Communication Laboratory U G 2**

Laboratory in the areas of communication theory and signal processing.

Au, Wi Qtrs. 1 cl, 1 3-hr lab. Prereq or concur: 501. Not open to students with credit for 607.

**517 Electromagnetics Laboratory U 2**

Transmission line parameters; attenuation, magnitude and phase of voltage and current on lines; reflected waves; waveguide characteristics and techniques; antenna patterns and impedances; optical devices.

Su, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq: 312.

**551 Introduction to Feedback Control Systems U G 3**

Feedback systems; modeling; stability; Routh Criterion; root locus; Bode plots; lead/lag, PID controller design, and state feedback.

Au, Sp Qtrs. 3 cl. Prereq: 352.

**557 Control, Signals, and Systems Laboratory U G 2**

Laboratory study of signal processing, control systems and their components, computer-controlled instrumentation, sampled data systems, analog and digital control.

Su, Au, Wi Qtrs. 1 cl, 1 3-hr lab. Prereq or concur: 551.

**561 Digital Circuit Design U G 3**

An introduction to digital circuit design using integrated circuit components; gates, counters, latches, ALU, shift registers, multiplexers, memories, etc.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 206, 261, and prereq or concur: 320 or 321 or 323.

**567 Microprocessor Laboratory I U 2**

Self-paced laboratory in which the concept of a microprocessor is explored by designing and building simple systems, using ROM emulation as the development tool.

Su, Au, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq: 206, 261, and 265 or Cptr/Inf 360.

**582 Electrical and Computer Engineering Design I U 3**

Presents fundamentals of engineering designing and leads to skills development of a specific design proposal. Technical communication skills, both written and oral, are employed throughout.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 321 or 323, a second writing course, and sr standing in Elec and Cmptr Eng. GEC course.

**600 Introduction to Digital Signal Processing U G 3**

Properties of discrete-time signal processing systems; filter structures; sampling; A/D and D/A conversion; digital filter design; discrete Fourier transform; applications.

Au Qtr. 3 cl. Prereq: 352.

**609 Signal Processing Laboratory U G 2**

Real-time signal processing using DSP processors; architecture, instruction set, sampling, filtering, and other applications.

Sp Qtr. 1 cl, 1 3-hr lab. Prereq: 600.

**613 Antennas and Propagation for Wireless Systems U G 3**

Introduction to antennas; antenna design for wireless base stations and remote sites; statistical propagation of waves in urban and rural environments; applications to cellular and PCS.

Au Qtr. 3 cl. Prereq: 312.

**614 Introduction to Electromagnetic Compatibility U G 3**

Basic knowledge of electromagnetic compatibility (EMC) fundamentals including government EMC regulations, grounding, shielding, and crosstalk.

Sp Qtr. 3 cl. Prereq: 312.

**624 Power Electronic Devices and Circuits U G 3**

A study of general laws and constraints in power electronic circuits, switching characteristics, generic converter topologies and their operation principles, desirable switching trajectory, snubber circuits.

Au Qtr. 3 cl. Prereq: 321 or 323.

**628 Electronic Devices and Circuits Laboratory II U G 2**

A laboratory study of converter circuits, switching characteristics of power transistors and thyristors, and effects of circuit elements on the behavior of power converters.

Au Qtr. 1 cl, 1 3-hr lab. Prereq: 327; and prereq or concur: 624.

**637 Solid State Microelectronics Laboratory I U G 4**

Introduction to laboratory techniques including oxidation, chemical processes, photolithography, diffusion, and metallization; fabrication and measurements of planar diodes and transistors.

Au Qtr. 2 cl, 1 4-hr lab. Prereq: 432.

**640 Industrial/Commercial Power Systems U G 3**

An introduction to power system design for commercial buildings and industrial plants; legal and economic considerations; equipment specifications and ratings; design practice; fault calculations, protection, and coordination; grounding; and illumination design.

Sp Qtr. 3 cl. Prereq: 340 or 341.

**643 Electric Machines U G 3**

Magnetic circuits, transformers, electromechanical energy conversion principles, concepts of rotating machines, direct current machines, synchronous machines, and induction machines; steady state and transient analysis.

Au Qtr. 3 cl. Prereq: 341.

**644 Noise, Interference, and Safety Issues in Electrical Engineering U G 3**

Understanding, modeling, characterization, measurement, and reduction techniques of noise and interference phenomena; personal and equipment safety, instrumentation and regulatory issues.

Au Qtr. 3 cl. Prereq: 311, and 301 or 305. Not open to students with credit for 694G.

**647 Micro Controller Systems for Industrial Applications Laboratory U G 2**

Micro controller systems; sensors, electromechanical devices; electric drives and control of electric machines.

Wi Qtr. 1 cl, 1 3-hr lab. Prereq: 447 or permission of instructor.

**650 Introduction to Estimation U G 3**

Linear dynamic systems with random inputs, least squares estimation, mean-squared estimation, and Kalman filtering with applications in electrical engineering.

Au Qtr. 3 cl. Prereq: 352, and Math 530 or Stat 427.

**662 Theory and Design of Digital Computers U G 3**

Design of general purpose digital computers including arithmetic and control units, input/output, memory subsystems, interrelation of hardware and software systems, and introduction to microprogramming.

Au, Sp Qtrs. 3 cl. Prereq: 265 or Cptr/Inf 360, and 561. Not open to students with credit for 562.

**667 Digital Logic Laboratory U G 3**

A self-paced laboratory involving the design of basic computer components such as registers, arithmetic logic units, counters, and the design of sequential machines.

Su, Wi, Sp Qtrs. 2 cl, 1 3-hr lab. Prereq: 561.

**682 Group Project for Electrical and Computer Engineering Design II U 3**

This design course integrates various areas of electrical and computer engineering into a real design project. Weekly progress reports, design reviews, and a final oral presentation with a written report are required.

Au, Wi, Sp Qtrs. 2 cl, 1 3-hr lab. Prereq: 582 and sr standing. Not open to students with credit for 683.

**683 Individual Project for Electrical and Computer Engineering Design II U 3**

This design course integrates various areas of electrical and computer engineering into a real design project. Weekly progress reports, design review, and a final oral presentation with a written report are required.

Su, Au, Wi, Sp Qtrs. 2 cl, 1 3-hr lab. Prereq: 582, sr standing, and permission of instructor. Not open to students with credit for 682.

**693 Individual Studies in Electrical and Computer Engineering U G 1-18**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**694 Group Studies in Electrical Engineering U G 1-18**  
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 or hrs.

**700 Digital Signal Processing U G 3**

Vector space methods for signals and systems; least squares design methodologies; design optimization; adaptive filtering; time-frequency techniques.

Wi Qtr. 3 cl. Prereq: 600 or equiv, or grad standing.

**701 Communication Networks U G 3**

Introduction to modern communication networks; data traffic, queueing models, multiaccess channels, and selected applications.

Sp Qtr. 3 cl. Prereq: Math 530 or Stat 427 or equiv or grad standing.

**702 Communications Systems U G 3**

A study of communications systems with emphasis on signal-to-noise characteristics of various modulation and coding techniques.

Sp Qtr. 3 cl. Prereq: 501 or 601.

**706 Medical Imaging U G 3**

Introduction to medical imaging techniques, including data collection and image processing for projection X-ray, computed tomography, ultrasonic, and magnetic resonance.

Sp Qtr. 3 cl. Prereq: 352.

**707 Digital Image Processing U G 3**

Fundamentals and research directions in image processing: Fourier transforms, sampling, filtering and restoration, compression, edge detection and feature extraction.

Wi Qtr. 3 cl. Prereq: 600; Math 530 or Stat 427 or equiv, or grad standing.

**710 Microwave Circuits U G 4**

Theory of microwave passive devices, transformers, couplers, filters, resonators, and circulators; computer-aided design of microwave circuits; microstrip realization and testing with a network analyzer.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 312 or equiv or grad standing.

**711 Radiation from Antennas U G 3**

Dipole, loop, aperture, reflector, lens, surface wave, and other antennas; array theory; radiation resistance, directivity, and input impedance.

Wi Qtr. 3 cl. Prereq: 312 or equiv or grad standing.

**713\* Elements of Radio Wave Propagation U G 3**

Practical methods for predicting tropospheric, groundwave, and ionospheric propagation, including refraction, reflection, and extinction effects.

Sp Qtr. 3 cl. Prereq: 312 or equiv or grad standing. Even years

**714\* Radar Systems U G 3**

Study of radar systems and their applications; emphasis on measurement of target parameters by means of radar with applications to ranging, tracking, mapping, and navigation.

Au Qtr. 3 cl. Prereq or concur: 613, or grad standing. Not open to students with credit for 704. Odd years

**716 Optics with Laser Light U G 3**

Wave equation, ray optics, optical matrices, near and far-field diffraction theory, diffraction integral with lenses, Fourier optics, optical computing, holography, polarization, birefringence, applications.

Au Qtr. 3 cl. Prereq: 352 and 312, or grad standing in engineering, chemistry or physics.

**719 Electromagnetic Field Theory I U G 3**

Fundamental laws of electrodynamics; dielectric, magnetic, and conductive media; energy, force, and momentum; radiation, scattering, and dispersion; interior boundary value problems; and Green's functions.

Au Qtr. 3 cl. Prereq: 312 or equiv or grad standing.

**720 Low-Power Mixed-Signal VLSI Design U G 3**

Low voltage low power analog design for mixed analog/digital VLSI systems in CMOS technologies, OpAmps and comparators, sample and hold, switched capacitor filters, Nyquist and oversampling converters, decimation filters, applications in baseband wireless communications, integrated sensors.

Wi Qtr. 3 cl. Prereq: 323 or 322 or grad standing.

**721 Digital VLSI Design U G 3**

Design and circuit analysis of basic VLSI structures such as adders and registers; custom macro-cell, bit slice, and re-use design concepts; physical layout design, layout parasitics extraction, use of VLSI layout design tools.

Sp Qtr. 3 cl. Prereq: 323 or 322 or grad standing.

**722 Introduction to Analog Integrated Circuits U G 3**

Introduction to bipolar and MOS analog integrated circuit (IC) analysis and design. DC biasing for ICs, current sources, sinks and active loads, bandgap references, input and output stages, OpAmp architectures, nonlinear analog ICs. Computer simulation of Analog ICs.

Au Qtr. 3 cl. Prereq: 323 or 321 or grad standing.

**723 Microwave Transistor Amplifiers and Oscillators and Laboratory U G 4**

Design principles of microwave transistor amplifiers and oscillators; low-noise, power, and broadband amplifiers; and computer-aided design, microstrip realizations, and testing in the laboratory.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 312, and 323 or 322; or grad standing.

**724 Power Electronic Devices and Circuits II U G 3**

General model, operational principles, and application of high-frequency switching power converters.

Wi Qtr. 3 cl. Prereq: 341 and 624.

**730 Fundamentals of Semiconductors for Microelectronics and Optoelectronics U G 3**

Crystal structure, semiconductor energy band structure, electron transport and carrier recombination, heterostructures, optical and dielectric properties, optical semiconductor devices.

Au Qtr. 3 cl. Prereq: 432 or equiv.

**731 Fiber Optics U G 3**

Waveguiding in optical fibers, fiber losses, coupling and power launching, detectors, sources, noise, receiver and transmitter design, link analysis, introduction to fiber sensors.

Sp Qtr. 3 cl. Prereq: 312, and 323 or 321; or grad standing.

**732\* Quantum Electron Devices: Lasers U G 4**

Atomic interaction with radiation, cavities with gain, pumping techniques, amplifier, and oscillator configurations.

Au Qtr. 4 cl. Prereq: 432 and 312, or grad standing in engineering, chemistry, or physics. Odd years.

**734\* Solid State Electronics Design and Technology I U G 3**

Discrete and integrated circuit device design and silicon technologies, VLSI processing procedures, and device measurements for process development.

Sp Qtr. 3 cl. Prereq: 432. Odd years.

**735\* Compound Semiconductor Electronics Design and Technology U G 3**

III-V compound semiconductor device fabrication technology; epitaxy, doping, bandgap engineering; GaAs and InP high speed devices and IC design approaches; testing and failure mechanisms.

Wi Qtr. 3 cl. Prereq: 432. Even years.

**736\* Electronic Surfaces and Interfaces U G 3**

Physical principles governing electronic, chemical, and structural properties of semiconductor interfaces and the techniques available to characterize them.

Wi Qtr. 3 cl. Prereq: 331 or equiv. Not open to students with credit for 894L. Cross-listed in Physics. (as special topics course). Odd years.

**737\* Photonics Laboratory U G 4**

Experiments in photonics from among: fiber optics, liquid crystals, quantum devices, optical sensing, acousto-optics, lasers, solar cells, holography, and optical computing. Supplemental lecture.

Wi Qtr. 2 cl, 1 4-hr lab. Prereq: 312, and prereq or concur 432; or grad standing. Odd years.

**740 Electric Power System Analysis U G 3**

A study of major components and steady state operation of electric power systems; network concepts, symmetrical components, asymmetrical systems, power flow, and system stability.

Au Qtr. 3 cl. Prereq: 341.

**741 Electric Power System Protection U G 3**

A study of methods and devices used in system protection; protection systems, relay types, pilot wire and carrier systems, relay response, protection of machines, transformers, buses, and lines; instrument transformers; and modern trends in protection.

Wi Qtr. 3 cl. Prereq: 740.

**743 Electromechanical Motion Devices U G 3**

Electromechanical energy conversion, dynamic models for control of electric machines, design and analysis of electromechanical motion devices.

Wi Qtr. 3 cl. Prereq: 351, and prereq or concur: 341; or permission of instructor.

**744\* Modern Control of Industrial Electrical Machinery U G 3**

Dynamic models of three-phase AC motors and power devices; PWM inverters; AC and DC drives; and vector control, flux weakening control, and scalar control of electric machines.

Sp Qtr. 3 cl. Prereq: 743. Odd years.

**745 Reliability in Electrical and Computer Engineering U G 3**

Basic reliability concepts, combinatorial reliability, Markov processes. Applications to various electrical and computer engineering facilities; analysis of maintenance, outages, failures; reliability of programmable devices.

Wi Qtr. 3 cl Prereq 351.



**747 High Voltage Engineering and Laboratory I U G 4**

Dielectric strength and breakdown of gases, liquids, and solids, electric field design problems in power system equipment; laboratory study of high voltage insulation.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 341.

**750 Linear System Theory U G 3**

Canonical realization of transfer functions; state observability and controllability; state feedback and asymptotic observers; reduced order observers; direct transfer function design.

Au Qtr. 3 cl. Prereq: 352 and 551; or grad standing.

**752 Feedback Control Systems U G 3**

Principles of feedback control, robustness, sensitivity and performance objectives, classical controller design methods, introduction to loop shaping and parameterization of stabilizing controllers.

Wi Qtr. 3 cl. Prereq: 551 or grad standing.

**753 Applications of Control**

Modeling, analysis, and control design for important areas where control theory is applied.

Wi Qtr. 3 cl. Prereq: 551 or grad standing. Repeatable for different titled topics only.

**753.01\* Powertrain Control U G 3**

Classical and modern control methods applied to automotive powertrain systems; overview of production hardware; sensors and actuators; modeling for control.

Wi Qtr. Odd years.

**753.02\* Autonomy in Vehicles U G 3**

Autonomy in the context of modern vehicles; cruise control, anti-lock brake systems (ABS), steering control/lane keeping; introduction to automated highway systems (AHS).

Wi Qtr. Even years.

**754 Nonlinear Systems U G 3**

Analysis of nonlinear control systems; Lyapunov stability, numerical methods, phase-plane techniques, describing functions, and linearization via feedback.

Sp Qtr. 3 cl. Prereq: 551 or grad standing.

**755 Digital Control Systems U G 3**

Difference equations, z-transforms, digital filtering, sampling quantization, analog-digital conversion; block diagramming to model digital and hybrid control systems.

Au Qtr. 3 cl. Prereq: 551 or grad standing.

**757 Control Interfacing and Design Laboratory U G 3**

Laboratory study of feedback control systems with experiments analyzing different types of plants, transducers, and control techniques; emphasis on real-time computer control.

Wi Qtr. 2 cl, 1 4-hr lab. Prereq: 265, and 755 or 557; or grad standing.

**758 Control System Implementation Laboratory U G 3**

Laboratory study of advanced feedback control techniques as applied to nonlinear and multi-output systems under computer or microprocessor control.

Sp Qtr. 2 cl, 1 4-hr lab. Prereq: 557 or 755 or grad standing.

**761 Switching Circuit Theory U G 3**

Minimization of multiple output combinational circuits, computer-aided design, state minimization, asynchronous sequential machines, state assignment, transient analysis.

Au Qtr. 3 cl. Prereq: 662 or 562 or Cptr/Inf 675.

**762 Theory and Design of Digital Computers II U G 3**

Detailed design of major components of modern computer architecture; design of controllers, ALUs, floating point units, caches, and memory management units using a hardware description language.

Wi Qtr. 3 cl. Prereq: 561 or equiv, and 662 or 562 or Cptr/Inf 675.01 or equiv.

**763\* Introduction to Real-Time Robotics Systems U G 3**

Components of a Robot System, types, electronic system components, and analog-digital conversion; error analysis; hardware and software.

Au Qtr. 3 cl. Prereq: 265, 352, 323 or 321; or grad standing. Odd years.

**765 Microcomputer Structures U G 3**

An investigation of current microcomputer structures with emphasis on hardware implementation of I/O, direct memory access, interrupts, memory, and microprogramming.

Au Qtr. 3 cl. Prereq: 662 or 562.

**766 Computer Interfacing and Protocols U G 3**

A hardware oriented course dealing with the electrical principles of computer interfaces for digital communication including time domain effects, serial/parallel interfaces, modems, and associated protocols.

Wi Qtr. 3 cl. Prereq: 561, and 662 or 562 or Cptr/Inf 675 or equiv.

**769 Microprocessor Laboratory U G 3**

Open shop design in which students design, construct, debug, and program microprocessor systems based on currently available microprocessors, memories, I/O devices, etc. using sophisticated microprocessor development systems.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 561, 567, and 765.

**777 Overvoltages in Electrical and Computer Engineering U G 3**

Transient overvoltages, origins and effects; transient overvoltage suppression, design techniques; electrostatic discharges (ESD), generation and impact; immunity to ESD, protective measures; application examples; case histories.

Sp Qtr. 3 cl. Prereq: 301. Not open to students with credit for 694Q.

**779 Introduction to Artificial Neural Network Methods U G 3**

Survey of fundamental methods and techniques of artificial neural networks: single and multi-layer networks; associative memory and statistical networks; supervised and unsupervised learning.

Wi Qtr. 3 cl. Prereq: 600 or 662 or Cptr/Inf 630 or permission of instructor. Not open to students with credit for Cptr/Inf 779. Cross-listed in Computer and Information Science.

**H783 Honors Program Research U G 1-3**

Honors program students are offered the opportunity to pursue independent distinction project/research. Student presentations and thesis writing included.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in Elec & Cptr Eng, minimum CPHR of 3.4, and permission of instructor. Open only to Elec & Cptr Eng undergraduate students and students in BS/MS program. Repeatable to a maximum of 6 cr hrs.

**793 Individual Studies in Electrical and Computer Engineering U G 1-18**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**800 Stochastic Digital Signal Processing G 3**

Signal processing techniques for stochastic signals. Vector space methods, optimal filtering and prediction, parametric and nonparametric estimation; harmonic retrieval; applications.

Sp Qtr. 3 cl. Prereq: 700 and 805.

**802\* Digital Speech Processing Systems G 3**

The rapid rise of multimedia and cellular communications has led to widespread use of digital voice processing. This course is designed to prepare graduate students for research in this area.

Sp Qtr. 3 cl. Prereq: 600 and 804. Odd years.

**803\* Coding Theory G 3**

Error detection and correction codes for communications and data storage, finite fields and polynomial algebra, linear codes, Hamming and Reed-Mueller codes, cyclic codes, burst error correction codes, interleaving, Fire codes, and Reed-Solomon codes.

Wi Qtr. 3 cl. Prereq: 804. Even years.

**804 Random Signal Analysis G 3**

Probability, random variables, and random vectors for analysis and research in electrical engineering. Distribution functions and densities, expectation, characteristic functions, functions of random variables, random vectors and sequences, stochastic convergence.

Au Qtr. 3 cl. Prereq: 352 or equiv; Stat 427 or Math 530 or equiv.

**805 Random Processes and Applications G 3**

Random processes; autocorrelation and cross-correlation functions; energy and power spectral densities; mean-square calculus; minimum mean squared error signal estimators; optimal filtering; random processes as inputs to linear systems; applications to communications and signal processing.

Wi Qtr. 3 cl. Prereq: 804.

**806 Signal Detection and Estimation G 3-4**

Binary and M-ary decision theory; Bayes, minimax, ideal, and Neyman-Pearson detectors; maximum likelihood and maximum a posteriori estimation; and receiver operating characteristics.

Sp Qtr. 3 cl. Prereq: 805.

**807\* Advanced Communication Theory I G 3**

Advanced topics in wireless communication systems. Topics are selected to prepare graduate students for research and application to current problems in the field.

Au Qtr. 3 cl. Prereq: 806. Odd years.

**808\* Advanced Communication Theory II G 3**

Advanced topics in communication theory. Topics are selected to prepare graduate students for research and application to current problems in the field.

Au Qtr. 3 cl. Prereq: 806. Even years.

**810 Electromagnetic Field Theory II G 3**

Solution of Maxwell's equations in time and frequency domains; field theorems; integral representations; eigenfunction solutions; fields of moving charges.

Wi Qtr. 3 cl. Prereq: 719.

**812\* Applied High Frequency Methods in Electromagnetics G 3**

Introduction of ray and wave optical concepts leading to the uniform geometrical and physical theories of diffraction, Gaussian beam method; application to modern antenna and scattering problems in EM.

Au Qtr. 3 cl. Prereq: 719 and 810, or equiv. Odd years.

**813\* Finite Elements for Electromagnetics G 3**

Introduction to finite element, finite difference, and finite volume methods from the viewpoint of electromagnetics.

Sp Qtr. 3 cl. Prereq: 810. Even years.

**814\* Method of Moments in Electromagnetics G 3**

Method of Moments solution of integral equations of electromagnetic radiation and scattering; applications to conducting and material bodies, apertures, thin wires, microstrip, etc.

Wi Qtr. 3 cl. Prereq: 719. Even years.

**815\* Advanced Antenna Theory G 3**

Mutual impedance; moment method, aperture antennas; ground plane effects; horn and reflector antennas; pattern synthesis; antenna measurements.

Sp Qtr. 3 cl. Prereq: 711 and 810. Even years.

**817\* Advanced Electromagnetic Theory I G 3**

Foundations of the electrodynamics of continuous media; physical implications of the theory; moving sources, boundaries, and media; scalar Green's functions.

Au Qtr. 3 cl. Prereq: 810 or equiv. Even years.

**818\* Advanced Electromagnetic Theory II G 3**

Vector wave functions and dyadic Green's functions; integral equations and their solution by the moment, variational, and T-matrix methods; application to antenna and scattering problems.

Wi Qtr. 3 cl. Prereq: 817. Odd years.

**819\* Advanced Electromagnetic Theory III G 3**

Use of asymptotic methods to obtain high-frequency solutions; geometrical optics and the propagation through inhomogeneous media; geometrical theory of diffraction and its application to antenna and scattering problems.

Sp Qtr. 3 cl. Prereq: 818. Odd years.

**820 Analog VLSI Design G 3**

Introduction to analog VLSI design with emphasis on the hardware implementation of analog signal processing VLSI circuits and systems.

Sp Qtr. 3 cl. Prereq: 720, and prereq or concur: 721; or grad standing.

**831\* Semiconductor Device Theory G 3**

Basic semiconductor device current equations, measurement and analysis of interface states, advanced p-n junction theory, avalanche breakdown, metal-semiconductor contacts, MIS capacitors, and short channel devices.

Wi Qtr. 3 cl. Prereq: 730 or equiv. Even years.

**832\* High-Speed Semiconductor Devices G 3**

Principles underlying the operation and application of high-speed solid-state active devices, electron transport in high fields, Gunn effect, superlattices, heterostructures and modulation doped devices.

Sp Qtr. 3 cl. Prereq: 730 or equiv. Even years.

**833\* Optical Effects in Materials and Devices G 3**

Static and quasi-static piezoelectric, electro-optic, photo-refractive, acousto-optic and magneto-optic effects and devices based on these effects.

Au Qtr. 3 cl. Prereq: Grad standing in engineering, chemistry, or physics. Even years.

**835 Special Topics in Nanostructure Devices**

Fundamental electronic, optical and physical properties of nanostructures; application of nanostructure science to enable novel semiconductor devices for advanced optoelectronics, photonics, and electronics.

Repeatable for different titled topics only.

**835.01 Advanced Photovoltaics G 3**

Fundamentals of nanostructured semiconductors for photovoltaics; space solar cells; optoelectronic properties of semiconductors; physics, operation, and design of compound semiconductor solar cells.

Wi Qtr. 3 cl. Prereq: 730.

**841\* Computer Methods in Power System Analysis G 3**

A study of computer methods in electric power system analysis; incidence and network matrices, algorithms for formation of network matrices, three-phase network matrices, short circuit studies, iterative solution of simultaneous algebraic and differential equations, and power flow and transient stability studies.

Wi Qtr. 3 cl. Prereq: 740. Even years.

**842\* Power System Stability and Control G 3**

Control and transient stability of power system; excitation system; state estimation; advanced topics.

Wi Qtr. 3 cl. Prereq: 740 or permission of instructor. Odd years.

**843\* High Voltage Transmission Systems G 3**

High voltage transmission systems, electrical characteristics, corona phenomena, radio and television interference, audible noise, corona loss, electromagnetic field effects, insulation design, siting and route selection, and model studies.

Sp Qtr. 3 cl. Prereq: 740 or 747. Odd years.

**844\* Application of Power Electronic Circuits in Electric Power Systems G 3**

Advanced static VAR compensation, system stability enhancement, harmonic minimization, etc., by power electronic means will be discussed.

Sp Qtr. 3 cl. Prereq: 624 and 740, or permission of instructor. Even years.

**845\* Electromechanical System Identification G 3**

Electromechanical systems, model building, least-squares, output error and maximum likelihood estimation.

Sp Qtr. 3 cl. Prereq: 650 and 743. Not open to students with credit for 894K. Even years.

**850 Theory and Design of Feedback Control Systems G 3**

Linear feedback theory, stability, the quadratic regulator, output feedback pole placement and design of servocompensators, and CAD techniques for control systems.

Wi Qtr. 3 cl. Prereq: 750.

**851\* Stochastic Estimation and Control Systems G 3**

Synthesis of control systems, both linear and nonlinear, with random inputs; advanced topics.

Wi Qtr. 3 cl. Prereq: 750, and 650 or 805. Odd years.

**852\* Adaptive Control G 3**

Model reference adaptive control, direct and indirect methods, robustness issues, applications.

Wi Qtr. 3 cl. Prereq: 750, 752, and 754. Even years.

**853\* Nonlinear Control with Robotic Applications G 3**

System analysis with emphasis on closed chain dynamics, kinematics, and stability. Design of linear and nonlinear controllers for decoupling states and forces. Applications and examples.

Au Qtr. 3 cl. Prereq: 754 and 750; or permission of instructor. Odd years.

**854 Optimal Control Theory G 3**

Optimal control by dynamic programming, Pontryagin's maximum principle and variational methods; minimum time, energy, and fuel problems for linear continuous and discrete systems.

Sp Qtr. 3 cl. Prereq: 750 or permission of instructor.

**855\* Large Scale Systems G 3**

Computational methods in optimal control and large scale dynamical systems; decentralization, hierarchy and their effects on modelling, stability analysis, and optimal controller design and implementation.

Au Qtr. 3 cl. Prereq: 850. Even years.

**856\* Advanced Feedback Control G 3**

Input-output methods, modern frequency domain analysis and design techniques, Youla parameterization, and H<sub>2</sub> and H-infinity optimization.

Sp Qtr. 3 cl. Prereq: 752 and 850; or permission of instructor. Even years.

**858\* Intelligent Control G 3**

Introduction to intelligent and autonomous feedback control systems; modeling, analysis, and design techniques; advanced intelligent control techniques.

Sp Qtr. 3 cl. Prereq: 750 and 754. Odd years.

**859\* Sliding Mode Control in Electro-Mechanical Systems G 3**

Sliding mode control for decoupling of the design procedure and low sensitivity with respect to uncertainties, and application to control of electromechanical systems.

Au Qtr. 3 cl. Prereq: 551 or Mech Eng 571. Cross-listed in Mechanical Engineering. Odd years.

**861\* Fault Tolerant Design of Digital Systems G 3**

Reliable design of digital systems; fault detection; redundancy techniques; diagnosis of failures; automatic test generation and fault simulation; design for testability; and signature analysis.

Wi Qtr. 3 cl. Prereq or concur: 761. Even years.

**862\* Computational Aspects of Robotics G 3**

Study of computer hardware and programming issues involved in applying the mathematical equations that describe robotic mechanisms equipped with sensory inputs.

Sp Qtr. 3 cl. Prereq: 763. Even years.

**863 Computer Vision G 3**

Computer vision systems, image models, edge detection, feature extraction, shape representation, morphology, structural descriptions, object modeling, matching, knowledge bases, semantic knowledge, architectures, and depth perception.

Sp Qtr. 3 cl. Prereq: 707 or permission of instructor.

**864\* Advanced Computer Design G 3**

Parallel computer architectures, pipeline design, multiprocessor design, interprocessor communication, case studies and application examples.

Wi Qtr. 3 cl. Prereq: 662 and 761. Odd years.

**866\* Multisensor Integration for Intelligent Systems G 3**

Physical sensing devices, multisensor interface, sensor data fusion, object recognition by multisensor integration, and system organization for multisensor integration.

Au Qtr. 3 cl. Prereq: 662 or 562, and 763, Math 530 or Stat 427 or equiv, and Cptr/Inf 660. Even years.

**867\* Design of Advanced Data Networks G 3**

Recent advances in design and implementation of advanced data networks; consists of in-depth study on network protocols/algorithms and discussion on protocol implementation with software system building.

Au Qtr. 3 cl. Prereq: 701 or Cptr/Inf 677. Not open to students with credit for 894Q. Odd years.

**880 Advanced Studies in Electrical Engineering G 1-18**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs.

**881 Seminar in Electrical Engineering G 1-3**

Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**888 Open Graduate Seminar G 1-3**

As an introduction to potential research areas, students will attend OSU sponsored talks relevant to topics in Electrical Engineering and critique them by written reports.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in Elec Eng. Repeatable to a maximum of 6 cr hrs. The credit earned for this class will not be counted as part of the hour requirement for the Masters degree, nor can it be used as any part of the three areas of emphasis on the PhD Plan of Study. This course is graded S/U.

**894 Group Studies in Electrical Engineering G 1-18**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs.

**910\* Periodic Structures in Electromagnetics G 3**

Development of the Dyadic Green's function for one and two dimensional periodic structures of arbitrarily oriented elements; application to phased arrays with and without scan compensations.

Sp Qtr. 3 cl. Prereq: 711, 810, 815, or permission of instructor. Odd years.

**917\* Advanced Optical Concepts G 3**

Fiber and integrated optics and their applications, optical transfer functions, aberrations, optical thick holograms, numerical optical computing, and liquid crystals.

Wi Qtr. Prereq: 716 or permission of instructor. Odd years.

**993 Individual Studies in Electrical Engineering G 1-18**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**999 Research in Electrical Engineering G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Emergency Medicine

005 Upham Hall, 473 W. 12th Avenue Drive, 293-8176

**793 Individual Studies in Emergency Medicine G 1-5**

Research on a basic science or clinical issue in Emergency Medicine (under faculty supervision).

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor and grad standing in the M.S. program in Medical Sciences. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**794 Group Studies in Emergency Medicine G 1-5**

Special Topics in Emergency Medicine.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**850 Seminars in Emergency Medicine G 3**

Discussion of pertinent literature and research in subspecialty disciplines in Emergency Medicine.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor and grad standing in the M.S. program in Medical Sciences.

**999 Research in Emergency Medicine G 1-9**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Permission of instructor and grad standing in the M.S. program in Medical Sciences. Repeatable. This course is graded S/U.

## Engineering

122 Hitchcock Hall, 2070 Neil Avenue, 292-2651

**100 Engineering Survey U 1**

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services.

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: Enrollment in ENG. Not open to students with credit for Agr 100, Arts Col 100, Arts&Sci 100, Home Ec 100, Nat Res 100, and UVC 100.

**180 Freshman Engineering Seminar U 1**

Seminar for Pre-Engineering students to develop their study skills and practice these skills in their Pre-Calculus Mathematics courses.

Su, Au, Wi, Sp Qtrs. 2 1-hr rec. Prereq: Enrollment as Pre-Engineering, enrollment in Math 140 or 148 and in Engineer 100 or Univ Col 100 concurrently. This course is graded S/U.

**181 Introduction to Engineering I U 3**

Visualization and sketches, introduction to spreadsheets and MATLAB, experimental design and data analysis, problem solving approaches, hands-on lab.

Au, Wi, Sp Qtrs. 2 cl, 3 lab hrs. Prereq: prereq or concur: Math 150 or higher.

**182 Introduction to Engineering II U 3**

Team building, design-build project, written and oral reports, introduction to CAD, working drawings, preparation of visual aids.

Au, Wi, Sp Qtrs. 2 cl, 3 lab hrs. Prereq: 181

**194 Group Studies in Engineering U 1-6**

Special topics of general interest to engineering students.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**195 Women in Engineering U 1**

Discussion of the unique problems facing women engineering students and professionals; resources available to deal with those problems.

Wi, Sp Qtrs. 1 cl. This course is graded S/U.

**198 Introduction to Engineering U 1**

Lectures and discussion of various engineering disciplines: current activities, expectations, responsibilities and future trends.

Au, Sp Qtrs. 2 cl. This course is graded S/U.

**294 Group Studies in Engineering U 1-6**

Special topics of general interest to engineering students.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**H299 Engineering Honors Seminar U 1**

Undergraduate Research Scholars will present oral reports and lead discussion on their specific research projects.

Wi Qtr. 1 cl. Prereq: Participation in ENG Honors Program. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

**367 American Attitudes about Technology U 5**

Exploration of various perspectives regarding the impact of engineering and technology on American culture.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: English 110 or 111, and soph standing or above. GEC second writing course.

**689 Professional Practice in Engineering U 0**

Students complete a cooperative assignment in private industry or for a government agency; assignment is supervised by the employer and monitored and evaluated by the co-op program.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of the Director of the Co-op Program in Engineering. Repeatable. This course is graded S/U.

**694 Group Studies in Engineering U 1-6**

Special topics of general interest to engineering students.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**695 Engineering Teamwork Seminar U G 1**

Interactive training seminar that teaches communications and interpersonal skills vital to success as an engineer in industry. Sponsored by Tau Beta Pi National Engineering Honor Society.

Wi Qtr. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

## Engineering Graphics

240 Hitchcock Hall, 2070 Neil Avenue, 292-7923

**121 Graphic Presentation I U 3**

Presentation of three-dimensional subjects by precise graphics: orthographic, sectional, pictorial, and introduction to computer graphics.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl and lab. VPA Admis Cond course.

**122 Graphic Presentation II U 3**

Continuation of 121; elements of descriptive geometry, intersections, and development of surfaces, shade, and shadow.

Au, Wi, Sp Qtrs. 3 2-hr cl and lab. Prereq: 121. VPA Admis Cond course.

**141 Engineering Graphics I U 3**

Methods of problem solving and algorithmic development; introduction to 3-dimensional orthographic and pictorial visualization and presentation.

Wi Qtr. 3 2-hr cl and lab. Prereq or concur: Math 150 or equiv. VPA Admis Cond course.

**H141 Engineering Graphics I U 3**

Methods of problem solving and algorithmic development, and introduction to 3-dimensional orthographic and pictorial visualization and presentation.

Au, Wi Qtrs. 3 2-hr cl, lab. Prereq or concur: selection for honors program and Math 150 or equiv.

**142 Engineering Graphics II U 3**

Graphic problem solving techniques; introduction to computer graphics display methods; development of dimensioning and graphics skills.

Sp Qtr. 3 2-hr cl and lab. Prereq: 141. VPA Admis Cond course.

**143 Engineering Graphics III U 3**

Intermediate interactive computer graphics techniques and graphics conventions; comprehensive engineering problem solving project.

Au Qtr. 3 2-hr cl and lab. Prereq: 142.

**166 Engineering Graphics and Problem Solving U 4**

Introduction to 3-dimensional visualization and presentation with freehand, manual, and CADD methods; introduction to engineering problem solving and reporting.

Su, Au, Wi, Sp Qtrs. 4 2-hr cl. H166 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq or concur: Math 150 or better; Status as an engineering major, pre-major, or engineering undecided, or written permission of instructor. Not open to students with credit for 110. VPA Admis Cond Course. H166 (honors) may be available to students enrolled in an honors program or by permission of dept. Course incorporates hands on laboratory experience and is the first in a three course sequence (H166, H167, H168). Permission of instructor.

**167 Problem Solving through Programming for Engineering Calculations and Computer Graphics U 4**

Solving engineering problems using computer programming; development of algorithms and program modules; solutions to major problems will be presented in an engineering report format.

Su, Au, Wi, Sp Qtrs. 4 2-hr cl/lab. H167 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq or concur: Math 151 or better. Not open to students with credit for 200. VPA Admis Cond Course. H167 incorporates hands on laboratory experience and is the second in a three course sequence (H166, H167, H168). Prereq for H167: H166 and permission of instructor.

**H168 Engineering Fundamentals and Laboratory III U 4**

Third of three integrated courses. Design/build team project with documentation. Requires integration and application of concepts from previous engineering, math, and physics/mechanics courses.

Sp Qtr. 3 2-hr lec/lab. Prereq: Permission of instructor.

**204 Technical Drawing U 3**

Various systems of size description including precision dimensioning; fastening systems; and organization and preparation of engineering drawings, perspective, and computer graphics.

Au, Wi, Sp Qtrs. 2 2-hr cl and lab. Prereq: 121 or written permission of instructor.

**294 Group Studies in Engineering Graphics U 1-5**

Group studies of specially selected topics.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**304 Technical Illustration U 3**

Preparation of presentation graphics with emphasis on commercial techniques and design applications.

Wi, Sp Qtrs. 2 2-hr cl, lab. Prereq: 121.

**306 Architectural Drawing for Residential Buildings U 3**

Study of terminology and design considerations for residential buildings.

Sp Qtr. 2 2-hr cl and lab. Prereq: 121 or permission of instructor.

**404 Technical Airbrush Illustration U 3**

Preparation of airbrush graphics with emphasis on commercial techniques, materials, and presentations.

Au Qtr. 2 2-hr cl, lab. Prereq: 121.

**410 Computer Graphics U 3**

An advanced course in graphics with emphasis on the application of computer-generated graphics to the solution of engineering problems.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 166 or Engineer 182 or Engineer 194.07.

**504 Advanced Technical Illustration U 3**

Instruction, problems, materials, and graphic presentation.

Sp Qtr. 2 2-hr and individual consulting by arrangement. Prereq: 304 or 404 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**593 Individual Studies U G 1-5**

Opportunity to pursue special-interest topics not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**640 Solid Modeling in Engineering U G 4**

Theory and engineering applications of solid modeling in design, analysis, and manufacturing.

Su, Sp Qtrs. Prereq: 167, Math 254; Aero Eng 580 or Ceram En 406 or Metal En 250 or Cptr/Inf 541 and/or permission of instructor.

**694 Group Studies in Engineering Graphics U G 1-5**

Special topics in engineering graphics; topics, credit hours, and instructor announced the quarter preceding the offering.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**794 Group Studies U G 1-5**

Interdisciplinary topics related to engineering design, graphics, and vision.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

## English

421 Denney Hall, 164 West 17th Avenue, 292-6065

Courses 020,021,022,023,104,105,106,107,108.01,108.02 have been moved to Education: Teaching and Learning.

General Prerequisites for Courses Numbered 200 and 300

Unless otherwise indicated, the prerequisite for 200- and 300-level courses is English 110 or 111 or equivalent.

General Prerequisites for Courses Numbered 400 or above

Unless otherwise indicated, the prerequisites for 400-, 500- and 600-level courses are 10 credit hours of English courses at the 200 or 300 level or permission of instructor. A 367 offered by any department is acceptable towards the 10 hours.

500-level courses may provide graduate credit only in depts other than English.

Ordinarily all 500- and 600-level courses are offered at least once a year, but quarters of offering vary. Check the English listing in the quarterly Master Schedule of Classes Bulletin.

600-level courses may provide graduate credit in all depts.

#### General Prerequisites for Courses Numbered 700

Unless otherwise indicated, the prerequisites for 700-level courses are 15 credit hours of English courses at the 300 or 500 or 600 levels or the equivalent work in allied departments or permission of the instructor.

#### General Prerequisites for Courses Numbered 800

30 hrs of courses in English, or 20 hrs in English and 25 hrs in specified allied disciplines. Topics may not be taken which were formerly taken as courses under a different number. Admission to 800-level courses is by permission of a Department of English graduate adviser only.

#### General Prerequisites for Courses Numbered 900

15 hrs of English at the 800 level. Topics may not be taken which were formerly taken as courses under a different number. Admission to 900-level courses is by permission of an English department graduate adviser only.

### 109 Intensive Writing and Reading

Su, Au, Wi, Sp Qtrs. 5 cl or 2 2-hr cl. Credit may not count toward graduation in some degree programs.

#### 109.01 Intensive Writing and Reading I U 5

First course in a two-course sequence that provides intensive practice in integrating academic reading and writing.

Prereq: English Placement Test score of 6. Not open to students with credit for 052, 060, 110W, 110, or 111.

#### 109.02 Intensive Writing and Reading II U 5

Second course in a two-course sequence that provides intensive practice in integrating academic reading and writing.

Prereq: 109.01. Not open to students with credit for 053, 060, 110W, 110, or 111.

### 110 First-Year English Composition U 5

Practice in the fundamentals of expository writing, as illustrated in the student's own writing and in the essays of professional writers.

Su, Au, Wi, Sp Qtrs. No prereq except when testing determines 052, 053, 106, 107, 108.01, 109.01, 109.02, or 110W to be required. Not open to students with credit for English composition courses numbered 110, 110C, 110L, 110W, H110, 111, H111, or H167. This course is available for EM credit only through the AP program. GEC first writing course.

C— Taught in a computer-assisted classroom.

L— Taught with an emphasis on literature.

W— Intensive practice in the fundamentals of expository writing.

110 W taught in conjunction with English 193. Prereq: for 110 W: Placement level 5.

### H110 Honors First-Year English Composition U 5

Intensive practice in the fundamentals of writing for selected students, as illustrated in the student's own writing and in the essays of professional writers.

Su, Au, Wi, Sp Qtrs. Prereq: 28 or above on the English section of the ACT or 660 on the verbal section of the SAT. Not open to students with credit for English composition courses numbered 110, 110C, 110L, 110W, H110, 111, H111, or H167. GEC first writing course.

L— Taught with an emphasis on literature.

### H167 First-Year Writing Seminar in the Humanities U 5

Intensive critical reading and writing concerning central issues in the humanities.

Au, Wi, Sp Qtrs. Prereq: A score of 4 or 5 on the Advanced Placement Test, which earns EM credit for 110. GEC arts and hums, cultures and ideas course.

### 193 Individual Studies U 2-5

Su, Au, Wi, Sp Qtrs. Prereq: Fr standing and permission of Director of First-Year Writing. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 201 Selected Works of British Literature: Medieval through 1800 U 5

An introductory critical study of the works of major British writers from 800 to 1800.

Au, Wi, Sp Qtrs. H201 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 201: 110 or 111 or equiv. Prereq for H201: H110 or H111 or equiv or permission of instructor. Required of English majors. GEC arts and hums lit course.

### 202 Selected Works of British Literature: 1800 to the Present U 5

An introductory critical study of works of major British writers of the 19th and 20th centuries.

Su, Au, Wi, Sp Qtrs. H202 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 202: 110 or 111 or equiv. Prereq for H202: H110 or H111 or equiv or permission of instructor. Not open to students with credit for 284 or 285. Required of English majors. GEC arts and hums lit course.

### 220 Introduction to Shakespeare U 5

Study of selected plays designed to give an understanding of drama as theatrical art and as an interpretation of fundamental human experience.

Su, Au, Wi, Sp Qtrs. H220 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 220: 110 or 111 or equiv. Prereq for H220: 110 or 111 or equiv, and enrollment in an honors program. GEC arts and hums lit course.

### 260 Introduction to Poetry U 5

Designed to help students understand and appreciate poetry through intensive study of a representative group of poems.

Su, Au, Wi, Sp Qtrs. H260 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums lit course.

### 261 Introduction to Fiction U 5

Intensive study of a number of short stories and novels to acquaint the general student with some of the important themes and techniques of fiction.

Su, Au, Wi, Sp Qtrs. H261 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums lit course.

### 262 Introduction to Drama U 5

A critical analysis of selected dramatic masterpieces from Greek antiquity to the present, designed to clarify the nature and major achievements of western dramatic art.

Su, Au, Sp Qtrs. H262 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums lit course.

### 263 Introduction to Film U 5

Introduction to methods of reading film texts by analyzing cinema as technique, as system, and as cultural project.

1 3-hr cl, 1 2-hr cl. Prereq: 110 or 111 or equiv. GEC arts and hums VPA course.

### 265 Writing of Fiction I U 5

Practice in the writing of fiction; analysis and discussion of student work, with some attention to general methods of fiction and the publishing situation.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

### 266 Writing of Poetry I U 5

Practice in the writing of poetry; emphasis on the students' own work, with reference to established poetic patterns and established poetry.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

### 268 Writing of Creative Nonfiction I U 5

Practice in the writing of creative nonfiction; analysis and discussion of student work, with reference to the general methods and scope of the genre.

Su, Au, Wi, Sp Qtrs. Workshop-seminar. 2 2-hr cl. Prereq: English 110 or 111 or equiv. Repeatable to a maximum of 10 cr hrs.

### 270 Introduction to Folklore U 5

A general study of the field of folklore including basic approaches and a survey of primary folk materials: folktales, legends, folksongs, ballads, and folk beliefs.

Su, Au, Wi, Sp Qtrs. GEC arts and hums cultures and ideas course.

### 271 Introduction to English Language Study U 5

An introduction to the grammar, history, and social and regional dialects of the English language.

Au, Wi, Sp Qtrs. Not open to students with credit for 570, 669, 671, 672; or Linguist 201 or 601. GEC arts and hums cultures and ideas course.

### 275 Thematic Approaches to Literature U 5

An introduction to literature through the examination of a major theme as treated in different genres and periods; topic varies quarterly.

Wi Qtr. GEC arts and hums lit course.

### 280 The English Bible U 5

The Bible in English translation, with special attention to its literary qualities, conceptual content, and development within history.

Au, Wi, Sp Qtrs. H280 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums lit course.

**281 Introduction to African-American Literature U 5**

A study of representative literary works by African-American writers from 1760 to the present.

Wi Qtr. Offered in cooperation with African-American and African Studies. GEC arts and hums lit and social diversity course.

**290 Colonial and U.S. Literature to 1865 U 5**

Introductory study of significant works of U.S. literature from its Colonial origins to 1865.

Su, Au, Wi, Sp Qtrs. GEC arts and hums lit course.

**291 U.S. Literature: 1865 to Present U 5**

Introductory study of significant works of U.S. literature from 1865 to the present.

Su, Au, Wi, Sp Qtrs. Prereq: 110 or 111 or equiv. Not open to students with credit for 290 before Wi Qtr 1993. GEC arts and hums lit course.

**294 Group Studies U 3-5**

Topic varies from quarter to quarter on subjects not otherwise covered by English courses.

Repeatable to a maximum of 30 cr hrs.

**H296 Honors Seminar: Literature and Intellectual Movements U 5**

Studies in the relationship of works of literature to their general intellectual contexts, involving such topics as Deism, Marxism, Primitivism, Freudian psychology; topic varies quarterly.

Wi Qtr. Prereq: CPHR of 3.00 or better, with 3.50 or better in English, and permission of dept.

**303 Research and Term Paper Writing U 5**

Emphasis in researching, analyzing, and documenting secondary material for the formal essay and term paper; assignments incorporate research principles with informative, persuasive, and argumentative writing.

Sp Qtr. 5 cl. Prereq: 110 or 111 or equiv with permission of course director, and jr or sr standing.

**304 Business and Professional Writing U 3**

The study of principles and the practice of techniques associated with business and professional writing; emphasis on the style, organization, and conventions appropriate to business letters and reports.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 110 or 111 or equiv with permission of course director, and jr or sr standing.

**367 Intermediate Essay Writing**

Prereq: 110 or 110L or equiv and Rank 2, or a declared major in English. Not open to students with credit for 210, 267, H267, 301, 302, 303, 304, 305, or 367. Only one English 367 decimal subdivision may be taken for credit.

**H367 Honors Intermediate Essay Writing**

Not open to students with credit for 210, 267, H267, 301, 302, 303, 304, or 305. Only one English 367 decimal subdivision may be taken for credit.

**367.01 The American Experience U 5**

An intermediate course that extends and refines expository writing and analytic reading skills, with an emphasis on style and an introduction to documentation, with major topics pertaining to the United States.

Su, Au, Wi, Sp Qtrs. GEC second writing and social diversity course.

**H367.01 The American Experience U 5**

Intensive course that extends and refines expository writing and analytic reading skills, emphasizes style, introduces documentation; major topics pertain to the United States.

Au, Wi, Sp Qtrs. Prereq: 110 or 110L or equiv and Rank 2, or a declared major in English. GEC second writing and social diversity course.

**367.02 The U.S. Experience as Reflected in Literature U 5**

Discussion, analysis, and writing about issues presented through the diverse voices of U.S. literature.

GEC second writing and social diversity course.

**367.03 African-American Voices in U.S. Literature U 5**

Discussion, analysis, and writing about issues presented through the diverse voices of African-American literature.

Not open to students with credit for AfAm&ASt 367.03. Cross-listed in African-American and African Studies. GEC second writing and social diversity course.

**367.04 English in the United States U 5**

Discussion, analysis, and writing about issues related to the use of English in the United States.

GEC second writing course.

**367.05 The U.S. Folk Experience U 5**

Discussion, analysis, and writing about U.S. folk culture with a concentration on individual life stories.

GEC second writing and social diversity course.

**367.06 Composing U.S. Communities U 5**

Discussion, analysis, and writing about how rhetorical discourse helps to define, sustain, and challenge American society.

GEC second writing course.

**367.07 Issues of Diversity in U.S. Workplace Communication U 5**

Discussion, analysis and writing about issues of diversity as they affect communication in U.S. workplaces.

GEC second writing course.

**373 American and English Literature and Film U 5**

The interrelationship between literary and cinematic art.

Wi Qtr. Not open to students with credit for 273. GEC arts and hums cultures and ideas course.

**398 Critical Writing U 5**

Analysis of poetry, fiction, and drama, and issues in literary studies; intensive practice in writing critical essays in preparation for upper-division course work in English.

Su, Au, Wi, Sp Qtrs. Prereq: 110 or 111 or equiv, a 367 writing course, and a declared English major; Rank 4 students must have permission of the director of undergraduate studies. Not open to students with credit for 302. Required of English majors; enrollment limited to English majors except by permission of dept. GEC third writing course.

**H398 Honors Critical Writing U 5**

Intensive practice in writing various kinds of analyses of literary texts.

Au, Sp Qtrs. 2 2-hr cl. Prereq: 110 or 111, a second writing course, English honors major or written permission of instructor. GEC third writing course.

**405 Introduction to Technical Writing and Editing U 5**

Introduction to technical writing for humanities students.

Wi Qtr. 2 2-hr cl. Prereq: A 367 second writing course.

**467 Writing and Learning U 5**

Study of how writing skills develop, in the context of a peer consulting program, including 2 weekly classes and a 2-hour tutoring practicum.

Au, Sp Qtrs. 2 2-hr cl, arr practicum. Prereq: 110 or 111 or equiv.

**501 Expository Writing for Graduate Students G 5**

Intensive review of techniques of expository writing, with emphasis on writing research papers.

5 cl. Prereq: Grad standing and permission of instructor on the basis of a diagnostic essay administered on the first day of class. Not a substitute for Edu T&L 106, 107, or 108. Credit does not apply to the minimum number of cr hrs required for the master's or doctoral degrees.

**513 Introduction to Medieval Literature U G 5**

The study of masterpieces from the Middle Ages, chosen for their values in interpreting medieval culture as well as for their independent literary worth.

**514 Middle English Literature U G 5**

A study of non-Chaucerian classics from late medieval England, such as Sir Gawain and the Green Knight, Piers Plowman, and The Book of Margery Kempe.

Wi Qtr. 2 2-hr cl. Quarters will vary.

**515 Chaucer U G 5**

A close study of Troilus and Criseyde and The Canterbury Tales as introduction to the artist and his period.

Not open to students with credit for 615.

**520 Shakespeare U G 5**

A critical consideration of the art, personality, and achievement of Shakespeare in the light of Renaissance and modern significance.

**521 16th-Century Literature U G 5**

A study of Tudor prose and poetry as they exemplify literary art and as they reflect the creative and inquiring temper of the age.

Not open to students with credit for 621.

**522 Early 17th-Century Literature U G 5**

A study of the poetry and prose of 1600-1660, including the major works of Milton.

**531 Restoration and Early 18th-Century Literature U G 5**

A study of poetry, prose, and drama from Dryden and the Restoration playwrights to the works of Swift and Pope.

**535 Literature of the 18th Century U G 5**

A study of the ideas and artistry of the major figures of the 18th century: Swift, Pope, Fielding, Sterne, Boswell, and Johnson.

**540 Poetry and Poetics of the British Romantic Period U G 5**

Study of Romantic poetry and poetics: readings in Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, and Mary Shelley.

**541 Victorian Poetry and Poetics U G 5**

Study of Victorian poetry and poetics; readings in Tennyson, the Brownings, Arnold, the Rossetis, Swinburne, Hopkins, and Hardy.

**542 19th-Century British Novel U G 5**

Readings in a group of major novelists, such as Austen, Dickens, and Thackeray, with special emphasis upon social and humanistic values. Not open to students with credit for 641.

**543 20th-Century British Fiction U G 5**

A study of the development of British fiction after 1900, with emphasis on such major novelists as Conrad, Joyce, Lawrence, and Woolf. Not open to students with credit for 643.

**547 20th-Century Poetry U G 5**

A study of 20th-century American and British poetry, with emphasis on such major figures as Frost, Yeats, Stevens, Eliot, Williams, and Auden.

**549 Modern Drama U G 5**

An historical and critical examination of the major developments, personalities, and achievements in the drama of Europe and America since the advent of Ibsen.

Not open to students with credit for 649.

**550 Colonial and U.S. Literature to 1830 U G 5**

Introduction to selected works of early U.S. and Colonial literature including such writers as Anne Bradstreet, Phillis Wheatley, Benjamin Franklin, Washington Irving, James Fenimore Cooper.

**551 U.S. Literature, 1830-1865 U G 5**

An introduction to the major American writers of the mid-19th century: Poe, Hawthorne, Melville, Emerson, Thoreau, and Whitman.

**552 U.S. Literature, 1865-1914 U G 5**

Studies in fiction and poetry emphasizing such major figures as Twain, Howells, James, Dickinson, Robinson, Crane, Dreiser, and Willa Cather.

**553 20th-Century U.S. Fiction U G 5**

A study of American fiction after 1914, with emphasis on the work of such major figures as Anderson, Fitzgerald, Hemingway, and Faulkner.

**560 Special Topics in Poetry U G 5**

Topic varies; examples: the dramatic monologue; epic and mock epic; the religious lyric; narrative poetry.

Repeatable to a maximum of 10 cr hrs.

**561 Special Topics in Fiction U G 5**

Topic varies; examples: tragedy and irony in the novel; the novel of initiation; the novel and the city; the modern short story.

Repeatable to a maximum of 10 cr hrs.

**562 Special Topics in Drama U G 5**

Topic varies; examples: the revenge play; Restoration and 18th-century drama; tragedy; the play within the play.

Repeatable to a maximum of 10 cr hrs.

**563 Contemporary Literature U G 5**

A study of prose and poetry written since approximately 1945.

**564 Special Topics in a Major Author**

Intensive study of the work of one of the major authors of English and American Literature.

2 2-hr cl.

**564.01 Major Author in Medieval and Renaissance British Literature U G 5****564.02 Major Author in 18th and 19th Century British Literature U G 5****564.03 Major Author in American Literature to 1900 U G 5****564.04 Major Author in 20th Century Literature in English U G 5****565 Writing of Fiction II U G 5**

Practice in the writing of fiction; continuation of 265 at an advanced level.

Au, Wi, Sp Qtrs. Prereq: 265 or equiv and permission of instructor. Repeatable to a maximum of 10 cr hrs. including cr hrs earned in 665.

**566 Writing of Poetry II U G 5**

Practice in the writing of poetry; continuation of 266 at an advanced level.

Au, Wi, Sp Qtrs. Prereq: 266 or equiv and permission of instructor. Repeatable to a maximum of 10 cr hrs. including cr hrs earned in 666.

**567 Rhetoric and Community Service: A Writing Seminar U 5**

The study of issues relating to rhetoric, community service, and intercultural communication while serving as volunteers and as writers for a local community service agency.

Au, Wi, Sp Qtrs. 2 2-hr cl, 2 hrs on site. Prereq: 110 and one of the 367 decimals. Repeatable to a maximum of 10 cr hrs.

**568 Writing of Creative Nonfiction II U G 5**

Practice in the writing of essays and book-length creative nonfiction; continuation of 268 at an advanced level.

Au, Wi, Sp Qtrs. Prereq: 268 or equiv, and permission of instructor. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in 664.

**570 Introduction to the History of English U G 5**

A study of the historical development of English giving attention to social factors associated with language changes in the phonology, morphology, syntax, lexicon, and discourse structure.

Sp Qtr. Prereq: 10 cr hrs of English at 200 or 300 level or equiv, or permission of instructor. Not open to students with credit for 274.

**571 Studies in the English Language U G 5**

Topic varies; examples: American English; the sociology of American dialects; language and style.

Repeatable to a maximum of 10 cr hrs.

**572 Traditional Grammar and Usage U G 5**

An examination of terminology and structures traditionally associated with the study of English grammar and of usage rules, especially problematical ones, governing edited written American English.

**573 Rhetorical Theory and the Analysis of Discourse U 5**

A study of contemporary rhetorical theories to show how a range of literary and non-literary texts persuades readers to assent or action.

**574 History and Theories of Writing U G 5**

Study of the origins, definitions, and development of writing, with varying perspectives on historical, technological, theoretical, and ideological issues.

**575 Special Topics in Literary Forms and Themes U G 5**

Topic varies; examples: ironic forms; the Trojan War in English literature; the hero and the anti-hero; pastoralism and romance.

Repeatable to a maximum of 10 cr hrs.

**576 Special Topics in Critical Theory U G 5**

Study of selected issues or movements in critical theory; topics vary; for example, intention, structuralism and literature, new criticism and the contemporary scene, language and literature.

Repeatable to a maximum of 10 cr hrs.

**577 Special Topics in Folklore U G 5**

Topic varies; examples: children's folklore; folklore theory; Appalachian folklore; folk song; native American folklore; folk narrative; folklore and popular culture.

Repeatable to a maximum of 10 cr hrs.

**578 Special Topics in Film U G 5**

Examination of particular topics, themes, genres, or movements in cinema or in the relationship between cinema and literary texts.

Sp Qtr. 1 3-hr, 1 2-hr cl. Prereq: 110, 111, or equiv, and 10 hrs of course work in English at the 200 or 300 level, or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**579 Special Topics in Nonfiction U G 5**

Critical analysis of nonfiction written discourse with varied topics, i.e., Victorian prose, American nature writing, business and professional writing, biography and autobiography.

Wi, Sp Qtrs. 2 2-hr cl. Repeatable to a maximum of 10 cr hrs.

**580 Special Topics in Gay and Lesbian Language and Literature U 5**

Issues in the representation of gay and lesbian desires, identities, and cultures, through the study of literature, film, folklore, or language.

Au Qtr. 2 2-hr cl. Repeatable to a maximum of 10 cr hrs.

**582 Studies in African-American Literature U 5**

Topic varies; examples: Neo-slave narratives; the Harlem Renaissance; literature by African-American women.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Repeatable to a maximum of 10 cr hrs. including cr hrs earned in AfAm&ASl 582. Cross-listed in African-American and African Studies.

**H590 Honors Seminar: Major Periods in Literary History**

Intensive study of one of the major periods of English and American literature; periods vary quarterly.

Prereq: CPHR of 3.00 or better, with a 3.50 or better in English, and permission of dept.

**H590.01 The Middle Ages U 5****H590.02 The Renaissance U 5****H590.03 18th Century British Literature U 5****H590.04 Romanticism U 5****H590.05 The Later 19th Century U 5****H590.06 The Modern Period U 5**



**H590.07 Literature in English after 1945 U 5**

Intensive study of literature written in English after World War II, examining influential intellectual and literary movements and theories of the time.  
Sp Qtr. 2 2-hr cl.

**H590.08 U.S. and Colonial Literature U 5**

2 2-hr cl.

**H591 Honors Seminars: Topics in English Studies****H591.01 Special Topics in the Study of Creative Writing U 5**

A seminar in literary forms and themes, with a significant creative writing component.

2 2-hr cl. Prereq: 265 or 266 or 268; and enrollment in an honors program; or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**592 Special Topics in Women in Literature U G 5**

Close examination from feminist perspectives of literature by or about women; central topic varies, for example, biography or autobiography, women as artists, images, and stereotypes.

Repeatable to a maximum of 10 cr hrs. Offered in cooperation with Women's Studies.

**597 Issues of the Contemporary World**

Prereq: Sr standing. GEC contemporary world course.

**H597.03 Interdisciplinary Perspectives on Current Issues U 5**

Team-taught interdisciplinary and cross-cultural course on the relations among politics, ethics, rhetoric, and law as they confront current practical issues.

Sp Qtr. 2 2-hr cl. Not open to students with credit for Philos H597.03 or Polit Sc H597.03. Cross-listed in Philosophy and Political Science.

**H598 Honors Seminar: Selected Topics in Literature and Literary Interpretation U 5**

Selected problems (themes, movements, genres, and styles) emphasizing continuity and development in English and American literary and linguistic history; topic varies quarterly.

Au, Sp Qtrs. Prereq: CPHR of 3.00 or better with a 3.50 or better in English, and permission of dept. Repeatable to a maximum of 10 cr hrs.

**662 Literary Publishing U G 5**

Theory and practice of editing and publishing literature.

Au Qtr. Prereq: 265 or 266, 5 cr hrs of 500-level literature courses in English, and permission of instructor.

**676 History of Literary Criticism U G 5**

Intensive study of the basic texts in literary criticism from Plato to T. S. Eliot.

**692 Workshop U G 1-8**

Arr. Repeatable to a maximum of 12 cr hrs.

W— This alphabetical subdivision is graded S/U.

**693 Individual Studies U G 1-5**

Students may register for individual directed study under this number for work not normally offered in courses.

Prereq: Sr standing and permission of instructor and of dept undergrad or grad committee. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Repeatable to a maximum of 15 cr hrs.

**696 Research in English: Comprehensive Examinations G 1-18**

Research in preparation for MA comprehensive exams.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of grad studies director. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Introduction to Graduate Study in English G 5**

Introduction to bibliography, research methods, critical theory, and the principles of literary criticism for advanced work in English studies.

Prereq: Permission of director of graduate studies. Not open to students with credit for 800. Required of all MA candidates.

**710 Introduction to Old English Language and Literature U G 5**

The reading of Old English prose with special attention to the language and to cultural background.

**713 Introduction to Middle English Language U G 5**

An intensive study of Middle English phonology, morphology, syntax, and dialectology from 1100-1500, with selected readings in the literature.

**716 Introduction to Graduate Study in the Middle Ages U G 5**

Introduction to advanced study and current scholarship and criticism in medieval literature, 1300-1500.

Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**718 Introduction to Graduate Study in Chaucer U G 5**

Introduction to advanced study in Chaucer, with a focus on *The Canterbury Tales* and *Troilus and Criseyde*.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**720 Introduction to Graduate Study in Renaissance Drama U G 5**

Introduction to advanced study and current scholarship and criticism in drama by Shakespeare and his contemporaries.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**727 Introduction to Graduate Study in Literature of the 16th Century U G 5**

Introduction to advanced study and current scholarship and criticism in 16th century English literature.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted by permission of instructor.

**728 Introduction to Graduate Study in English Literature of the 17th Century U G 5**

Introduction to advanced study and current scholarship and criticism in 17th century English literature.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**736 Introduction to Graduate Study in the Restoration and 18th Century U G 5**

Introduction to advanced study and current scholarship and criticism in English literature, 1660-1800.

Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**737 Introduction to Graduate Study in 18th Century English Fiction U G 5**

Introduction to advanced study and current scholarship and criticism in 18th century English fiction.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**746 Introduction to Graduate Study in British Literature of the Romantic Period U G 5**

Introduction to advanced study and current scholarship and criticism in British literature of the Romantic period.

Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**747 Introduction to Graduate Study in British Literature of the Victorian Period U G 5**

Introduction to advanced study and current scholarship and criticism in British Victorian literature.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**755 Introduction to Graduate Study in American Literature, Origins to 1840 U G 5**

Introduction to advanced study and current scholarship and criticism in early American literature.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**756 Introduction to Graduate Study in American Literature, 1840-1914 U G 5**

Introduction to advanced study and current scholarship and criticism in American Literature, 1840-1914.

Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**757 Introduction to Graduate Studies in African-American Literature****757.01 Introduction to Graduate Studies in African-American Literature, 1746-1900 G 5**

A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1746 to 1900.

Au Qtr. 2 2-hr cl. Not open to students with credit for AfAm&ASl 757.01. Cross-listed in African-American and African Studies.

**757.02 Introduction to Graduate Studies in African-American Literature, 1900 to Present G 5**

A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1900 to the present.

Wi Qtr. 2 2-hr cl. Not open to students with credit for AfAm&ASt 757.02. Cross-listed in African-American and African Studies.

**762 Introduction to Graduate Study in Drama U G 5**

Introduction to advanced study in the theory, history, and practice of drama. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**763 Graduate Workshop in Poetry U G 5**

A graduate-level workshop in the writing of poetry.

Su, Au, Wi, Sp Qtrs. Prereq: MFA standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**765 Graduate Workshop in Fiction U G 5**

A graduate-level workshop in the writing of fiction.

Su, Au, Wi, Sp Qtrs. Prereq: MFA standing or permission of instructor. Repeatable to a maximum of 20 cr hrs. Designed for advanced undergrads and grad students.

**766 Introduction to Graduate Study in 20th Century Literature, 1900-1945 U G 5**

Introduction to advanced study and current scholarship and criticism in literature written in English 1900-1945.

Prereq: Grad standing in English or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

**767 Introduction to Graduate Study in 20th Century Literature, 1945-Present U G 5**

Introduction to advanced study in 20th century literature written in English since 1945.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

**768 Graduate Workshop in Creative Nonfiction U G 5**

A graduate-level workshop in the writing of creative nonfiction.

Su, Au, Wi, Sp Qtrs. Prereq: MFA standing or permission of instructor. Repeatable to a maximum of 20 cr hrs. Including cr hrs earned in 764.

**770 Introduction to Graduate Study in Folklore**

A two-course sequence in current scholarship and methods necessary for advanced study in folklore.

Sp Qtr. 2 2-hr cl. Cross-listed in Comparative Studies in the Humanities.

**770.01 Approaches and Research Methods G 5**

Bibliography, research, and critical approaches for the advanced study of folklore.

Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor. Not open to students with credit for Comp Std 770.01.

**770.02 Field Research G 5**

Methods and theory of field research and field ethics necessary for advanced study in folklore.

Prereq: Grad standing or permission of instructor. 770.01 or Comp Std 770.01 recommended. Not open to students with credit for Comp Std 770.02.

**771 Introduction to the English Language U G 5**

Introduction to the structure of and variation in the English language, with emphasis on both oral and written English.

**772 English Syntax U G 5**

A study of various systems of English grammar, with emphasis on their application to writing and teaching.

Prereq: 271 or 771, or Linguist 201 or 601.

**773 Applied English Phonology U G 5**

A study of English phonology and its application to a variety of literary and non-literary resources.

Prereq: 271, or Linguist 201 or 601.

**774 History of the English Language G 5**

The historical development of English and its place among the world's languages; emphasis on inner history and outer matrix.

**776 Graduate Study in the History of Literary Criticism**

A two-course sequence in literary criticism from Plato to contemporary theory.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Not open to students with credit for 676.

**776.01 From Plato to Aestheticism G 5**

Major texts and issues in criticism from the classical Greeks to Wilde.

**776.02 From 1900 to the Contemporary Period G 5**

Major texts and issues from 1900 to the present.

**777 American English U G 5**

Introduction to various aspects of the English language as it is used, and has been used in the continental United States.

Prereq: 271 or 771 or equiv or permission of instructor.

**778 Introduction to Graduate Study in Film and Film Theory G 5**

An introduction to the methodologies, contexts, and development of film and film theory.

Au Qtr. 1 2-hr cl, 1 3-hr cl. Prereq: Grad standing in English or permission of instructor.

**779 Introduction to Graduate Study in Rhetoric**

A two-course sequence in history and theory which provides a foundation for advanced study in rhetoric.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

**779.01 Classical to Early Renaissance U G 5**

History and theory of rhetoric from Classical Greece to early modern Europe.

**779.02 Renaissance to 20th Century U G 5**

History and theory of rhetoric from the Renaissance to the present.

Prereq: Grad standing in English or permission of instructor; 779.01 recommended.

**780 Current Theory and Practice in the Teaching of Writing U G 5**

Modern theories of composition; topics include: invention, style, sentence combining, evaluation, the composing process.

Prereq: Grad standing or permission of instructor.

**781 Introduction to the Teaching of First-Year English G 5**

Introduction to the theory and practice of teaching first-year English.

2 2-hr cl. Not open to students with credit for 881.01. Required of new GTAs in English.

**H783 Honors Research U 3-5**

A program of reading arranged for each student, with individual conferences, reports, and honors thesis.

Prereq: 4th yr standing; a grade of A in at least half of the English courses taken and an average of B in the remainder; permission of professor under whose supervision the work is to be completed. Open only to candidates for distinction in English who have in their jr yr completed with high grades a program approved by the undergraduate committee. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**790 Foundations of Contemporary Critical Theory U G 5**

Interdisciplinary survey of the theoretical bases of major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.

Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor. Cross-listed in Comparative Studies in the Humanities, French, German, Italian, and Spanish.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs. With permission of dept.

**795 Introduction to Research Methods in Rhetoric and Composition G 5**

Introduction to the quantitative and qualitative research methods most widely used in rhetoric and composition studies.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor.

**799 Graduate Studies in Literary Bibliography G 5**

An introduction to the materials and methods of literary bibliography for graduate students in literary studies.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing.

**803 Techniques of Literary Discussion G 2,3**

Practical and theoretical aspects of leading and participating in discussion of literary texts.

This course is graded S/U.

**817 Seminar in Early Medieval English Literature G 5**

Topics include: Beowulf and its background; Old English poetry exclusive of Beowulf.

Prereq: 710 or equiv. Repeatable to a maximum of 10 cr hrs.

**818 Seminar in Later Medieval English Literature G 5**

Topics include: Poetry of the alliterative revival; medieval English drama; 15th-century non-dramatic literature.

Repeatable to a maximum of 20 cr hrs.

**820 Seminar in Shakespeare G 5**

An intensive consideration of selected problems in the scholarly study of Shakespeare.

Repeatable to a maximum of 10 cr hrs.

**827 Seminar in English Renaissance Literature G 5**

Topics include: Renaissance and early 17th-century poetry; Spenser; Renaissance drama; Milton; Renaissance prose.

Repeatable to a maximum of 20 cr hrs.

**837 Seminar in Restoration and 18th-Century Literature G 5**

Topics: 18th-century novel; Restoration and 18th-century drama; 18th-century literature and culture.

Repeatable to a maximum of 25 cr hrs.

**840 Seminar in English Romantic Literature G 5**

Literary romanticism in relation to contemporary intellectual and political movements; topic varies from year to year.

Repeatable to a maximum of 15 cr hrs.

**844 Seminar in Victorian Literature G 5**

Topics include: Victorian poetry; 19th-century non-fictional prose; 19th-century novel.

Repeatable to a maximum of 15 cr hrs.

**850 Seminar in 19th-Century American Literature G 5**

Topics include: American literature 1865-1914; individual American writers, 1800-1900; the American Renaissance.

Repeatable to a maximum of 20 cr hrs.

**851 Seminar in Critical Approaches to Black Literatures G 5**

A close reading of major literary critical discourses that have shaped and determined the course of black literary production in Africa, North America, and the Caribbean.

2 2-hr cl. Prereq: Grad standing and an introductory course in African-American/African literature; or permission of instructor. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in Af-Af&AS 851. Cross-listed in African-American and African Studies.

**854 Seminar in 20th-Century American Literature G 5**

Topics include: 20th-century American fiction; individual 20th-century American writers; 20th-century poetry; 20th-century drama.

Repeatable to a maximum of 20 cr hrs.

**863 Seminar in 20th-Century British Literature G 5**

Topics include: 20th-century British fiction; individual 20th-century British writers; modern drama; 20th-century British poetry.

Repeatable to a maximum of 20 cr hrs.

**864 Postcolonial/Transnational Literatures G 5**

Topics include postcolonial and transnational literature in English; theories of colonial, postcolonial, and transnational literature and culture.

Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**870 Seminar in Folklore G 5**

Intensive study of some particular aspect of folklore.

Prereq: 770 or equiv with written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**871 Seminar in the Forms of Literature G 5**

Problems in the criticism of fiction, poetry, or drama.

Repeatable to a maximum of 20 cr hrs.

**872 Seminar in the English Language G 5**

Advanced English language study; topics vary.

Prereq: 771 or Linguist 601 or equiv with permission of instructor. Repeatable to a maximum of 10 cr hrs.

**876 Seminar in Critical Theory G 5**

A review of theory and practice in some of the principal forms of literary analysis; focus on a single theoretical movement or a single critical problem.

Repeatable to a maximum of 10 cr hrs.

**879 Seminar in Rhetoric G 5**

Rhetoric of a particular period; major figures in rhetoric, rhetorical analysis of literature.

Repeatable to a maximum of 10 cr hrs.

**880 Seminar in Composition G 5**

Invention; the composing process and revision; evaluating and responding to writing; discourse analysis.

Repeatable to a maximum of 10 cr hrs.

**881 Studies in the Teaching of College Composition****881.02 Teaching of Remedial College Composition G 5**

Theory and practice in the teaching of remedial college composition.

**881.03 Teaching of College Composition in English as a Second Language G 5**

Research in teaching English as a second language at the college level; materials and pedagogical techniques to use in English as a second language courses.

Prereq: 671 or Linguist 602.01 or permission of instructor.

**881.04 Teaching Business and Professional Communication G 5**

Theoretical foundations of and teaching techniques for major units in business communication, designed to prepare graduate students to do research in and to teach business and professional writing.

Prereq: 881.01 or permission of instructor.

**883 Studies in Literacy G 5**

Examination of the meanings of the term "literacy" and the historical, cognitive, social, economic, artistic, and political consequences of these definitions.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor.

Repeatable to a maximum of 15 cr hrs.

**890 Interdepartmental Seminar in Critical Theory G 5**

Interdisciplinary study of a movement (phenomenology, feminism, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.

Prereq: Background in critical theory recommended. Cross-listed in Comparative Studies in the Humanities, French, German, Spanish, and Women's Studies.

**894 Group Studies G 2-5**

Repeatable to a maximum of 15 cr hrs.

**895 Seminar in Research Methods in Rhetoric and Composition G 5**

Advanced study in a specific quantitative or qualitative research method in rhetoric and composition.

Prereq: 795 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**900 The Long Seminar: Research in Literary History, Theory, and Forms I G 5**

Reading and research in literature, its theory and forms, and its intellectual and social backgrounds.

Prereq: At least 25 cr hrs of grad instruction. Repeatable to a maximum of 10 cr hrs. This is a Progress course. 900 must be followed by 901. Credit awarded upon completion of 901.

**901 The Long Seminar: Research in Literary History, Theory, and Forms II G 5**

Continuation of 900.

Prereq: 900. Repeatable to a maximum of 10 cr hrs.

**903 Teaching College English G 5**

Students work as apprentices to faculty members in the planning and execution of an undergraduate English course.

Arr. Prereq: PhD standing and permission of instructor. Repeatable to a maximum of 15 cr hrs. Of the 15 maximum repeatable hrs only 5 will count towards the 45 crs hrs work requirement. This course is graded S/U.

**976 Problems and Methods of Literary Theory G 5**

A study of the basic methodologies and theoretical problems involved in the interpretation and evaluation of literature.

Prereq: 800 or equiv, or permission of instructor.

**980 Bibliography and Method G 5**

For advanced grad students in the methods and tools of literary research.

**982 Textual Criticism and Editing G 5**

Evaluation of literary editorial methods, past and present; training in skills requisite to the textual critic and scholarly editor; practice in textual editing.

Prereq: 980.

**993 Individual Studies G 1-15**

Doctoral students may register for individual study in areas not normally covered by courses.

Prereq: Permission of dept grad committee. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**996 Research in English: Candidacy Examination G 1-18**

Research in preparation for Ph.D. exams.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of graduate studies director. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**997 The Dissertation Seminar G 3**

Doctoral candidates present their research-in-progress to faculty and each other.

Prereq: Successful completion of the General Exam. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**998 Research in English: Thesis G 1-18**

Research for the master's thesis.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research in English: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Entomology

103 Botany and Zoology Building, 1735 Neil Avenue, 292-8209

**101 Insect Biology I U 5**

Biological sciences with insects as a model; structure, function, development, and interactions with environment.

Au, Wi Qtrs. 4 cl, 1 2-hr lab. Prereq: Math 075, 076, or 104; or Mathematics Placement Level R. GEC bio sci course.

**102 Insect Biology II U 5**

Continuation of 101; behavior, diversity, insect interactions with humans, pathogens, social insects.

Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 101 or Biology 101. GEC bio sci course.

**126 Introductory Insect Biology U 3**

Biology of insects and their relatives, with emphasis on behavior, ecology and diversity; collection is required.

Su Qtr. Offered at Stone Lab. Prereq: A high school course in biology.

**294 Group Studies U 1-5**

Group studies in the field of the chosen problem.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H444 Social Insects U 5**

Introduction to the biology of social insects (ants, bees, wasps, termites).

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 102, or Biology 102 or 114 or H116, or Plnt Bio 102; and enrollment in an honors program; or equivs with permission of instructor.

**460 Economic Entomology and Insect Pest Management****460.01 Lecture U 3**

Survey of insects and relatives that affect public health, crops, livestock, and the home; control methods, including principles of integrated pest management.

Wi Qtr. 3 cl. Prereq: Biology 100 or 113 or H115. Not open to students with credit for 460.

**460.02 Laboratory, General U 2**

Examination of specimens of main economic orders, and important pest species.

Wi Qtr. 2 2-hr labs. Prereq or concur: 460.01. Not open to students with credit for 460.

**461\*\* Forest Entomology U 3**

Insects and other arthropods in the forest as they relate to effective management for maximum production of wood products and sustained preservation of forests and parklands.

Wi Qtr. 3 cl. Prereq: Biology 100 or 113 or H115, and Plnt Bio 102; Forestry 223 recommended.

**462 Economic Entomology for Turf, Ornamentals, and Greenhouses U 4**

Survey of arthropod pests of turf, ornamentals, and greenhouses; emphasis on biology, identification, and control methods, including integrated pest management.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Biology 101 or 113 or equiv. Not open to students with credit for 460.03.

**500 General Entomology U G 5**

Structure, function, development, ecology, and insect-human interactions in an evolutionary context; lab stresses classification and identification of insects; insect collection required.

Su, Au Qtrs. 3 cl, 2 2-hr labs, field trip. Prereq: 15 cr hrs in biological sciences. For students at the jr or sr level in biological and agricultural sciences and grad students in biological sciences.

**520 Insect Biology for Teachers U G 3**

Morphology, identification, behavior, and activities in terrestrial/aquatic entomology; development of an integrated curriculum; designed for K-12 teachers.

Su Qtr. Offered at Stone Lab. One week (7 days). Inservice teachers and education majors are given first priority.

**531 Pesticides, the Environment, and Society U G 3**

The chemical, physical, and toxicological properties of pesticides are related to movement in the environment, and to their biological and ecological effects.

Au Qtr. 3 cl. Prereq: 5 cr hrs in organic chem and 10 cr hrs in biological sciences at the 200 level or above.

**592 Workshop U G 1-6**

Intensive study of a topic in entomology; the format will depend upon the topic.

Su, Au, Wi, Sp Qtrs. Arr, lecs, labs, or lecs/labs. Prereq: Written permission of workshop director. Repeatable to a maximum of 6 cr hrs.

**612 Aquatic Entomology U G 5**

Designed for preparation in the teaching of biology or for research on aquatic resources; emphasis on taxonomy and ecology of immature and adult aquatic insects.

Su Qtr. 3 all-day cl. Prereq: 500 or 611 or equiv.

**621\*\* Insect Systematics and Diversity U G 5**

Principles of systematics and application to insect classification and identification.

Au Qtr. 2 cl, 6 lab hrs. Prereq: 500 or equiv.

**623\* Insect Morphology U G 5**

Comparative external and internal anatomy of insects and other arthropods; organ systems in developmental, functional, and evolutionary contexts; individual histological projects.

Wi Qtr. 2 cl, 3 2-hr labs. Prereq: 500 or equiv.

**626 Cladistic Methods G 3**

Designed to familiarize students with the philosophy and tools of cladistic analysis to interpret current literature and to execute publishable analysis of their own data.

Wi Qtr. 3 cl. Prereq: EEOB or Zoology 400 or equiv. Repeatable to a maximum of 6 cr hrs.

**631 Insect Physiology U G 5**

The general physiology of insects and other arthropods; labs stress the use of insects to demonstrate fundamental physiological processes.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 500, and Chem 251 and 254; or equivs.

**641\*\* Insect Ecology U G 5**

The distribution, abundance, population regulation, plant-insect interactions, and species survival patterns of insects are analyzed in relation to microenvironment and ecosystems.

Au Qtr. 3 2-hr lec/labs. Prereq: 500, and EEOB/Plnt Bio/Zoology 413.01; or equivs.

**642\* Insect Behavior G 4**

Introduction to mechanisms of insect behavior, behavioral physiology and ecology, and social behavior.

Wi Qtr. 2 2-hr cl. Prereq: 500 or permission of instructor.

**650\* Biological Control of Arthropod Pests U G 4**

Introduction to the theory and practice of biological control of arthropod pests.

Wi Qtr. 3 cl, 2 lab hrs. Prereq: 20 cr hrs in life sciences, including at least one entomol course.

**660 Advanced Economic Entomology U G 5**

Theory and practice of pest population management, emphasizing current research, population modelling, sampling, and data analysis.

Au Qtr. 3 cl, 2 2-hr labs, field trips. Prereq: 460.02, and EEOB/Plnt Bio/Zoology 413.01; or equivs with written permission of instructor.

**661\*\* Medical Entomology U G 5**

Arthropod agents and vectors of vertebrate disease: life cycles, behavior, pathogenesis, identification, control; arthropod-pathogen and arthropod-vertebrate relationships; arthropod-borne disease systems.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 500 and EEOB or Zoology 610 recommended.

**662\*\* Principles of Insect Toxicology U G 5**

The properties of insecticides, modes of action, metabolism, toxicity factors, joint action, resistance, experimental procedures and interpretation of data.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 631 or equiv or permission of instructor.

**664\* Host Plant Resistance to Insects U G 3**

Introduction to the theory and application of host plant resistance as a means of insect control and its integration with other insect control strategies.

Sp Qtr. 2 1.5-hr cl. Prereq: 5 cr hrs in entomol or plnt path; or permission of instructor; 5 cr hrs of plnt bio recommended. Not open to students with credit for this topic under 694.

### 693 Individual Studies U G 1-10

Individual work in the field of the chosen problems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs. No more than 5 cr hrs may be counted toward an undergrad entomol major. This course is graded S/U.

### 694 Group Studies U G 2-5

Group work in the field of the chosen problems.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. for grads and 15 cr hrs for undergrads.

### 697 Study at a Foreign Institution U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

### 698 Study Tour

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

#### 698.01 Domestic U G 1-15

Repeatable.

#### 698.02 Foreign U G 1-15

Repeatable.

### H783 Honors Research U 3-5

A program of reading and research for each student with individual conferences, reports, and Honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degrees BA or BS with distinction in entomol. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

### 795 Special Topics in Entomology U G 1-3

Seminar on publications, current research, or research techniques in the following topics:

Su, Au, Wi, Sp Qtrs. 1, 2, or 3 cl. Prereq: 25 cr hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs.

A—Acarology

B—Apiculture

C—Behavior

D—Biological Control

E—Ecology

F—Economic Entomology

G—Genetics

H—Medical Entomology

I—Pathology

J—Physiology-Toxicology

K—Research methods (data analysis)

L—Systematics (evolution)

### 796 Advanced Studies and Techniques in Entomology G 1-2

Presentation of specialized information and methods of entomologically related research, teaching, and extension.

Su, Au, Wi, Sp Qtrs. 1 or 2 2-hr cl. Prereq: 500 or equiv. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 800 Entomology Seminar G 1

Faculty, graduate students, and outside speakers will participate; topics: recent advances in various entomological fields.

Au, Wi, Sp Qtrs. 1 1.5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 831\*\* Advanced Insect Physiology G 5

Insect biochemistry and recent advances in insect physiology; lab consists of a term project.

Su Qtr. 2 cl, 2 3-hr labs. Prereq: 631 or EEOB 415 or Zoology 415 or 432, or equiv.

### 840\*\* Insect Chemical Ecology G 3

Chemical strategies used by insects for defense, mate finding, and host selection; techniques used for the characterization of semiochemicals.

Sp Qtr. 1 2-hr cl, 1 2-hr lab. Given at OARDC, Wooster, Ohio. Prereq: 642 and Chem 251 and 254; or equivs; or permission of instructor; Biochem 511 recommended.

### 871 Agricultural Acarology G 4

An intensive review of the mites associated with crops, ornamental plants, and stored food products with emphasis on taxonomy and ecology of these animals.

Su Qtr. 1 cl, 1 4-hr lab, 8 hrs cl/lab daily for 3 wks.

### 872 Soil Acarology G 6

Taxonomy, ecology and life-history of mites associated with soil and litter.

Su Qtr. 3 cl, 3 2-hr labs/day for 18 days. Prereq: 670 and Biology 114, or permission of instructor. Course is part of the Acarology Summer Program. This course is graded S/U.

### 880 Research and Training Seminar G 2

Presentation of procedures, resources, and faculty research in the Department of Entomology. Required of all graduate majors during the first year of registration.

Au Qtr. 1 2-hr cl. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

### 891 Interdepartmental Seminar in Environmental Biology G 2

Selected topics treating the environmental aspects of organisms, populations, and ecosystems as they may relate to time, space, and human activities.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Given cooperatively by Entomology and Evolution, Ecology, and Organismal Biology. This course is graded S/U.

### 999 Research in Entomology G 1-18

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Environmental Science

240 Hitchcock Hall, 2070 Neil Avenue, 292-9762

Interdepartmental Seminar in Environmental Biology  
See Entomol, Micrbiol, Pint Bio, and Zoology 891.

### 994 Group Studies U G 1-5

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 697 Study at a Foreign Institution U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

### 793 Individual Studies in Environmental Science G 1-18

Affords the qualified student the opportunity for independent reading, study, practical experience, or laboratory work in a specialized field of interest.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

### 798 Current Research Issues in Environmental Studies G 1

Graduate seminar where faculty from within and outside the University and graduating students will present their research.

Au, Wi, Sp Qtrs. This course is graded S/U.

### 999 Research in Environmental Science G 1-18

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Evolution, Ecology, and Organismal Biology

104 Botany and Zoology Building, 1735 Neil Avenue, 292-8088

### 110 Introduction to Local Flora U 3

Structures, processes, and stages of the plant life cycle; common families of flowering plants; plant geography, ecology, and conservation; and uses of plants.

Su Qtr. 1 week full-time at Stone Laboratory. Prereq: A course in high school biology.

### 125 Introductory Aquatic Biology U 3

Components of the ecosystem in freshwater aquatic environments at Stone Laboratory.

Su Qtr. 1 week full-time at Stone Laboratory. Prereq: A course in high school biology. Not open to students with credit for Zoology 125.

**126 Introduction to the Study of Birds U 3**

An introductory course for students interested in ornithology including bird identification, behavior and ecology, with an emphasis on field and laboratory techniques.

Su Qtr. 1 week full-time at Stone Laboratory. Prereq: Successful completion of a course in high school biology. Not open to students with credit for Zoology 126.

**210 Local Flora U 5**

A lecture, laboratory, and field course in identifying common Ohio plants; emphasis on taxonomic principles, use of keys and manuals, and field recognition of plants.

Su, Sp Qtrs. 3 cl, 2 2-hr labs, several Sat field trips. Prereq: Biology 114, or Plnt Bio 102 or 112, or equiv with written permission of instructor. Not open to students with credit for Plnt Bio 210. NS Admis Cond course.

**232 Introductory Physiology U 5**

A survey of human nerves and nervous system, sense organs, muscle function, circulation, respiration, digestion, metabolism, kidney function, and reproduction.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 5 cr hrs in general biology or general chemistry; Biology 102 or 113 recommended. Not open to students with credit for Zoology 232. Credit does not count toward a major in zoology. Not intended for biological science majors. GEC bio sci course. NS Admis Cond course.

**235 Introductory Anatomy U 5**

An introduction to mammalian anatomy with emphasis on human anatomy; dissection of cat.

Su, Wi Qtrs. 3 cl, 1 3-hr lab. Prereq: 5 cr hrs in general biology (Biology 102 recommended) or Anthropol 200. Not open to premedical students or students with credit for Zoology 235 or 512. Credit does not count toward a major in zoology. Not intended for biological science majors. GEC bio sci course. NS Admis Cond course.

**293 Individual Studies U 1-5**

Individual work in the field of the chosen problem.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 201 or 405; and written permission of instructor. Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in Zoology 293. Only 5 hrs to count on zoology major. This course is graded S/U.

**294 Group Studies U 1-5**

Study of selected topics in evolution, ecology, and organismal biology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. Including hrs earned in Zoology 294.

**322 Introduction to Ornithology U 5**

The general biology of birds with emphasis on their natural histories and on the field identification of local species.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 5 cr hrs in introductory biology. Not open to students with credit for Zoology 220 or 322. NS Admis Cond course.

**350 Dynamics of the Dinosaurs U 3**

Review of current information on dinosaur biology, emphasizing scientific approaches to reconstructing dinosaurs as living, dynamic animals.

Sp Qtr. 3 cl, 1 one-day field trip. Prereq: 5 cr hrs of biological science or historical geology course work. Not open to students with credit for Zoology 250 or 350.

**370 Extinction U 3**

Exploration of the causes of, and possible solutions to, the present-day global extinction event.

Sp Qtr. 2 1.5-hr cl. Prereq: 5 cr hrs of biological sciences course work.

**400 Evolution U 5**

Basic conceptual issues and processes in evolution with emphasis on the ecological basis of adaptation and consequences of natural selection.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 114 or H116. Not open to students with credit for Zoology 400 or 420.

**H400 Evolution U 5**

Basic conceptual issues and processes in evolution focusing on the ecological basis of adaptation and consequences of natural selection; class discussions, reading, and writing assignments.

Wi Qtr. 3 80-min cl. Prereq: Biology 114 or H116, and Mol Gen 500 or 501. Not open to students with credit for 400, or Zoology 400 or 420.

**405 Diversity and Systematics of Organisms U**

Au, Wi, Sp Qtrs. Prereq: 400 or Zoology 400. Not open to students with credit for 405 or Zoology 201 or 405.

**405.01 Lecture U 4**

Survey of organismal diversity and the evolutionary relationships between and within major taxonomic groups.

4 cl. Prereq: 400 or Zoology 400.

**405.02 Laboratory U 2**

Laboratory survey of animal diversity (including animal-like protists), and the evolutionary relationships between and within major taxonomic groups.

2 2-hr labs. Prereq: 400 or Zoology 400; prereq or concur: 405.01.

**410 Animal Form and Function U 3**

Functional systems in invertebrates and vertebrates: respiration; circulation; water, ion, and energy balance; communication; locomotion; and reproduction.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Biology 114 or H116, Chem 122, Math 148, and Physics 111 or 131. Not open to students with credit for Zoology 410 or 633 or 654.

**413 Introduction to Ecology**

NS Admis cond courses.

**413.01 Lecture U 3**

Distribution and abundance of species, population dynamics, community ecology, ecosystem dynamics, and applied perspectives.

Au, Wi Qtrs. 3 cl. Prereq: 10 cr hrs in biological sciences. Not open to students with credit for Plnt Bio 313, 313.01, 313.02, or 413.01; or Zoology 313, 313.01, 313.02, 413.01, or 413.03.

**H413.01 Lecture U 4**

Distribution and abundance of species, population dynamics, community ecology, ecosystem dynamics, and applied perspectives.

Sp Qtr. 2 1.5-hr cl. Prereq: Math 151 and 10 cr hrs in biological sciences. Not open to students with credit for 413.01; or Plnt Bio 313, 313.01, 313.02, or 413.01; or Zoology 313, 313.01, 313.02, 413.01, or 413.03.

**413.02 Laboratory U 2**

Critique of ecological primary literature, analysis of ecological data, and design and execution of experiments.

Au, Wi Qtrs. 2 cl. Prereq or concur: 413.01; or prereq: Plnt Bio 413.01 or Zoology 413.01. Not open to students with credit for Plnt Bio 313, 313.01, 313.02, or 413.02; or Zoology 313, 313.01, 313.02, 413.02, or 413.03.

**413.03 Lecture and Laboratory U 5**

Distribution and abundance of species, population dynamics, community ecology, ecosystem dynamics, applied perspectives, and design and execution of experiments.

Prereq: 10 cr hrs in biological sciences. Not open to students with credit for 413.01 or 413.02; or Plnt Bio 313, 313.01, 313.02, 413.01, or 413.02; or Zoology 313, 313.01, 313.02, 413.01, 413.02, or 413.03. Offered only at the regional campuses.

**415 Principles of Animal Cellular and Developmental Biology U 4**

Introduction to the structure and function of animal cells, and to patterns of early development in vertebrates and invertebrates.

Wi Qtr. 4 cl. Prereq: 400 or Zoology 400 recommended; Biology 113 or H115, Chem 231 or 252, and Physics 112 or equiv. Not open to students with credit for Mol Gen 502; or Zoology 415, 432, 515, or 522.

**440 Introductory Ethology U 5**

Observations of animal behaviors, and introductory analysis of their adaptive value, physiological mechanisms, development, and evolution; emphasis on movie presentations, reading, and small-group discussions.

Au Qtr. 4 cl, 1 2-hr field work per week. Prereq: 405, or Zoology 201 or 405. Not open to students with credit for Zoology 340 or 440. GEC third writing course.

**470 Biology of Vertebrates U 5**

Analysis of the anatomical, physiological, behavioral and ecological characteristics of the major vertebrate groups.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 405, or Zoology 201 or 405. Not open to students with credit for Zoology 470.

**502\*\* Plants and People U G 4**

Introductory course on the botany and historical uses of economically important plants; topics include the major food, spice, drug and industrial plants, their domestication and cultural significance.

Au Qtr. 3 cl, 1 arr. Prereq: 5 cr hrs in biological sciences. Not open to students with credit for Plnt Bio 502.

**505^ Marine Biology and Ecology U G 5**

Diversity and distribution of marine organisms; population dynamics, productivity, and structure of marine ecosystems; human impact on ocean resources.

Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq: 405, or Plnt Bio 102 or 112, or Zoology 201 or 405, or equiv; Plnt Bio 413.02, or Zoology 413.02 or 413.03 recommended. Not open to students with credit for Zoology 505.

**510 Field Botany U G 5**

Collection, preservation, field and laboratory identification, and local distribution of plants of the major groups.

Su, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: Biology 102 or 114, or Plnt Bio 102 or 112; or permission of instructor. Not open to students with credit for Plnt Bio 510 or 610.

**512 Laboratory in Vertebrate Dissection U G 2**

Introduction to the techniques of vertebrate dissection and comparative procedure.

Au, Wi, Sp Qtrs. 1 4-hr lab. Prereq or concur: 410; or prereq: Zoology 410 or 511. Not open to students with credit for Zoology 335 or 512.

**514\*\* Laboratory in Animal Physiology U G 2**

Introduction to the principles and techniques of animal physiology gained through laboratory experiments.

Wi Qtr. 1 4-hr lab. Prereq or concur: 410 or 415 or a physiol course; or prereq: Zoology 410 or 415. Not open to students with credit for Zoology 514.

**H557\* Tropical Field Ecology U 3**

Study of tropical ecosystems and biodiversity; includes travel to Costa Rica, independent field experimentation, and inquiry into the natural history of tropical plants and animals.

Sp Qtr. Arr. Prereq: 413.01; enrollment in an honors program and permission of instructor. Travel to Costa Rica over Spring break. Mandatory organizational meetings Wi Qtr. Participants must cover airfare and in-country expenses. Students will pay Ohio State fees as well as travel and subsistence costs.

**597 Issues of the Contemporary World**

Prereq: Sr standing. GEC course.

**597.02 Antarctic Marine Ecology and Policy U 5**

Historical and contemporary evaluation of Antarctic resource management and its scientific basis.

Au, Wi, Sp Qtrs. 3 1.5 cl. H597.02 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Int Stds 597.02 or Nat Res 597.02. Cross-listed in International Studies and Natural Resources.

**611 Higher Aquatic Plants U G 5**

Aquatic plants, other than the algae, of Great Lakes region; field and laboratory work on their identification and ecological and geographical relations.

Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq: Plnt Bio 102 or 112, and 15 additional cr hrs in biological sciences. Not open to students with credit for Plnt Bio 611.

**612^ Invertebrate Zoology U G 5**

The collection and identification of invertebrate animals; development of methods of classification, and use of keys.

Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq: 405, or Zoology 201 or 405, or equiv. Not open to students with credit for Zoology 612.

**613 Biology of the Invertebrates U G 5**

Ecology, evolution, morphology, embryology, and physiology of major invertebrate groups exclusive of insects; labs will illustrate lecture concepts using living and preserved material.

Au Qtr. 3 cl, 2 2-hr labs, 1 required wkend field trip to Lake Erie. Prereq: 405, or Zoology 201 or 405; English 110 or 111 or equiv; and 10 additional cr hrs in EEOB or zoology above the 200 level or equiv. GEC third writing course.

**617\* Theoretical Ecology I U G 5**

The models, assumptions, and conclusions of the mathematical theory of ecology including stability notions, deterministic and stochastic models, and models for patchy environments.

Wi Qtr. 5 cl. Prereq: 413.01 or 413.03, or Plnt Bio 313 or 413.01, or Zoology 313 or 413.01 or 413.03, or equiv; and differential and integral calculus. Not open to students with credit for Plnt Bio 617, or Zoology 617 or 714. This course is graded S/U.

**621 Ichthyology U G 5**

Study of the distribution and classification of fishes, which includes methods of identification, collection, and preservation.

Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq: 405, or Zoology 201 or 405, or equiv. Not open to students with credit for Zoology 621.

**622\*\* Herpetology U G 5**

Local species of reptiles and amphibians, their habits, life histories, ecology, and classification.

Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq: 405, or Zoology 201 or 405, or equiv. Not open to students with credit for Zoology 622.

**624\*\* Field Techniques in Ornithology U G 5**

Topics include instinctive behavior in the life of birds, the breeding cycle, social relations, territory, ecology, characteristics of populations, and techniques in field study of birds.

Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq: 10 cr hrs of bio sci course work or permission of instructor. Not open to students with credit for Zoology 624.

**625 Mammalogy U G 5**

Mammals of the world, their natural history, distribution, taxonomy, and major anatomical and physiological adaptations; study of local species emphasized in lab.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 405, or Zoology 201 or 405, or equiv. Not open to students with credit for Zoology 625.

**626 Biology of Fishes U G 5**

Lecture emphasis on the behavior, migration, distribution, and evolution of fishes; laboratory emphasis on ecological and systematic ichthyology.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 405, or Zoology 201 or 405; and 15 cr hrs in biological sciences; or permission of instructor. Not open to students with credit for Zoology 626.

**630 Vertebrate Histology U G 5**

Examination and analysis of the functional morphology of cells and tissues of vertebrate animals, with emphasis on mammalian histology.

Sp Qtr. 3 cl, 2 3-hr labs. Prereq: 5 cr hrs in biological structure/functions (e.g., 410 or 415, or Mol Gen 502, or Zoology 410 or 415) or permission of instructor. Not open to students with credit for Zoology 530 or 630. GEC third writing course.

**632\* Neurobiology U G 5**

Survey of neuroscience covering neuronal cell physiology, properties of neural circuits, neural development, and functional organization of nervous systems.

Wi Qtr. 5 cl. Prereq: 10 cr hrs of biological sciences at 500 level or above, or grad standing. Not open to students with credit for Neurosci 724 and 725, or Zoology 532 or 632.

**634^ Vertebrate Reproduction U G 5**

A study of the evolutionary, morphological, hormonal, and environmental aspects of reproduction in vertebrates with laboratory investigations of fish, birds, and mammals.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 405 or 410, or Zoology 405 or 410; and Vet Phys 411 or equiv. Not open to students with credit for Zoology 634.

**636^ Animal Biomechanics U G 5**

Biomechanics of support, locomotory, feeding, and ventilatory systems; effects of size; emphasis primarily, but not exclusively, vertebrate.

Wi Qtr. 5 cl. Prereq: 410 and 512, or Zoology 410 and 512. Not open to students with credit for Zoology 511 or 636.

**637\*\* Aspects of Vertebrate Functional Anatomy U G 5**

Exploration of interactions of historical, mechanical, and functional factors that affect the structure of recent vertebrates.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq: 512, or Zoology 335 or 512, or equiv; or permission of instructor. Not open to students with credit for Zoology 637.

**640\*\* Animal Behavior U G 5**

An experimental study of the biological basis of animal reactions.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 440, or Zoology 340 or 440, or permission of instructor. Not open to students with credit for Zoology 640.

**647 Plankton U G 5**

Examination of phytoplankton and zooplankton communities, emphasizing population dynamics, seasonality, predation, and productivity; lab emphasis on identification and quantitative methods for collecting and enumerating plankton.

Au Qtr. 2 cl, 2 3-hr labs, 1 required wkend field trip to Lake Erie. Prereq: English 110 or 111 or equiv, and 20 cr hrs in biological sciences; 413.01 or 413.03 or 652 or 655, or Plnt Bio 413.01, or Zoology 413.02 or 413.03 or 652 or 655 recommended. Not open to students with credit for Zoology 647. Occasionally offered at Stone Laboratory. GEC third writing course.

**651 Field Zoology U G 5**

Field and laboratory identification of aquatic and terrestrial vertebrates and invertebrates of the region, in relation to habitats occupied.

Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq: 405, or Zoology 201 or 405, or equiv. Not open to students with credit for Zoology 651.

**652 Limnology at Stone Laboratory U G 5**

Study of physical, geological, chemical and biological factors influencing freshwater life; field and laboratory techniques for determining lake morphometry, chemistry and biological productivity are emphasized.

Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq: 405, or Zoology 201 or 405, or equiv; 10 cr hrs in chem; 10 cr hrs in physics; and written permission of instructor. Not open to students with credit for Zoology 652.

**653 Fish Ecology U G 5**

Field and laboratory studies of life histories and interspecific relationships of fishes and of the various factors influencing their abundance.

Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Overmight field trips. Prereq: 621 or Zoology 621. Not open to students with credit for Zoology 653.



**654 Ecological Physiology of Aquatic Animals****654.01 Ecological Physiology of Aquatic Animals U G 4**

Study of the aquatic habitat includes physical and chemical adjustment, tolerance, and acclimatization to environment of vertebrates and invertebrates.

Wi Qtr. 4 cl. Prereq: 410, or Zoology 410, or equiv; and 5 cr hrs each in chem, physics, and physiol. Not open to students with credit for Zoology 654, 654.01, or 654.02.

**654.02 Third Writing Course U G 5**

Study of the aquatic habitat including physical and chemical adjustment, tolerance, and acclimatization to environment of vertebrates and invertebrates.

Wi Qtr. 4 cl. Prereq: 410, or Zoology 410, or equiv; 5 cr hrs each in chem, physics, and physiol; and GEC second writing course. Not open to students with credit for Zoology 654, 654.01, or 654.02. GEC third writing course.

**655 Limnology U G 5**

A study of the physical, chemical, and biological factors influencing the biological productivity of inland waters, and of techniques and equipment used in evaluating them.

Sp Qtr. 3 cl, 1 4-hr lab, several field trips (some Sat). Prereq: 10 cr hrs in chem and 20 cr hrs in biological sciences. Not open to students with credit for Zoology 655.

**656 Ecosystems of the World: Temperate, Boreal, and High Latitude Ecosystems U G 5**

Intermediate course in ecology emphasizing structure-function relations at broad scales incorporating soil development, geomorphology, climate, and human impact into analyses of major temperate, boreal, and polar ecosystems.

Wi Qtr. 1 2-hr cl, 1 2.5-hr cl. Prereq: 413.01 or 413.03, or Plnt Bio 413.01, or Zoology 413.01 or 413.03; 15 cr hrs in natural science or natural resources; and sr or grad standing; or permission of instructor. Not open to students with credit for Nat Res 656 or Plnt Bio 656. Cross-listed in Natural Resources.

**657\* Experimental Field Ecology U G 5**

Field research projects in plant and animal and aquatic and terrestrial ecology, emphasizing experimental design, data collection, analysis, interpretation, and expression of results.

Au Qtr. Prereq: 413.02 or 413.03, or Plnt Bio 313 or 413.02, or Zoology 313 or 413.02 or 413.03; and at least 15 cr hrs in biological sciences. Not open to students with credit for Plnt Bio 657 or Zoology 657.

**660\* Fisheries Biology U G 5**

A population dynamics approach to fishery biology emphasizing ecological relationships, yield models, and human constraints.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 655 or Zoology 655, and English 110 or 111 or equiv. Not open to students with credit for Zoology 660. GEC third writing course.

**661 Conservation Biology U G 5**

Application of population and community ecology, population genetics, and biogeography to the study and conservation of biodiversity, threatened communities, and endangered species.

Au Qtr. 3 cl, 2 2-hr labs, occasional field trips (some Sat). Prereq: 15 cr hrs in biological sciences above the 100 level, including 413.01 or 413.03, or Plnt Bio 313 or 413.01, or Zoology 313 or 413.01 or 413.03. Not open to students with credit for Zoology 661.

**671\* Plant Population Ecology U G 5**

Quantitative study of plant population processes, community organization, and ecological methods.

Au Qtr. 3 cl, 1 4-hr lab, field trips. Prereq: 413.02 or 413.03, or Plnt Bio 413.02, or Zoology 413.02 or 413.03; Math 151; and 15 cr hrs in biological sciences. Not open to students with credit for Plnt Bio 621.

**672\* Taxonomy of Vascular Plants U G 5**

A laboratory, field, and discussion course concerning the classification of vascular plants; emphasis on taxonomic principles, systems of classification, family characteristics and relationships.

Sp Qtr. 3 cl, 2 2-hr labs, several Sat field trips. Prereq: 210 or Plnt Bio 210, and 10 additional cr hrs in biological sciences; or permission of instructor. Not open to students with credit for Plnt Bio 612.

**673\* Evolutionary Processes in Flowering Plants U G 5**

Origin of variation in plants with emphasis on evolutionary processes unique to the flowering plants.

Au Qtr. 5 cl. Not open to students with credit for Plnt Bio 613.

**674\* Physiological Ecology of Plants U G 5**

Physiological relationships between light, water, mineral nutrients and plant growth, including plant-insect and plant-microbe interactions.

Au Qtr. 3 cl, 1 4-hr lab. Prereq: 413.02 or 413.03, or Plnt Bio 413.02, or Zoology 413.02 or 413.03; and 15 cr hrs in biological sciences. Not open to students with credit for Plnt Bio 632.

**692 Workshop U G 1-6**

Intensive study of topics in evolution, ecology, and organismal biology; format will depend upon the topic and time.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of workshop director. Repeatable to a maximum of 12 cr hrs. Including hours earned in Zoology 692. This course is graded S/U.

**693 Individual Studies U G 2-10**

Individual work in the field of the chosen problem.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. Including hours earned in Zoology 693. No more than 5 cr hrs may be counted toward an undergrad zoology major. This course is graded S/U.

**694 Group Studies U G 2-5**

Group work in the field of the chosen problem.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 35 cr hrs. for grad cr and 20 cr hrs for undergrad cr, including hours earned in Zoology 694.

**695 Senior Seminar in Evolution and Ecology U 3**

Seminar on topics in evolution and/or ecology; required of all undergraduate evolution and ecology majors in their 4th year.

Wi Qtr. 1 2-hr cl. Prereq: 15 hours in the biological sciences at the 200 level or above, and 4th-yr standing. This course is graded S/U.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Including cr hrs earned in Zoology 697. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Prereq: Permission of instructor. Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**710\*\* Creation and Evolution: Differing World Views U G 5**

Philosophical and historical survey of the controversy over evolutionary theory and creationist viewpoints.

Sp Qtr. 5 cl. Prereq: 10 cr hrs of biology. Not open to students with credit for Plnt Bio 710.

**714 Theoretical Ecology II**

Continuation of 617 with emphasis on populations in environments, stochastic models, and nonequilibrium theory.

Prereq: 617, or Plnt Bio 617, or Zoology 617; or permission of instructor. Not open to students with credit for 714, or Plnt Bio 714, or Zoology 714.

**714.01\*\* Lecture U G 4**

Dynamic optimization theory applied to ecology and resource management.

Wi Qtr. 2 1.5-hr cl.

**714.02\*\* Laboratory U G 2**

Computer techniques for solving optimality problems in ecology and resource management.

Wi Qtr. 2 2-hr cl. Prereq or concur: 714.01. This course is graded S/U.

**720\*\* Community Ecology and Ecosystems U 5**

A quantitative and descriptive approach to the establishment, development, succession, and dynamics of plant communities and their interrelations with historic, climatic, soil, and biotic factors.

Sp Qtr. 5 cl, several field trips. Prereq: 413.01 or 413.03, or Plnt Bio 413.01, or Zoology 413.01 or 413.03; and 20 cr hrs in biological sciences. Not open to students with credit for Plnt Bio 620 or 620.01 or 720.

**730\*\* Bioacoustics U G 3**

Theory and practice of the study of animal sound: physics of sound transmission, acoustic analysis, and the use of sound in communication.

Au Qtr. 2 cl, 1 2-hr lab, 1 Saturday field trip. Prereq: 440 or 640 or 740, or Psych 601, or Zoology 440 or 640 or 740. Not open to students with credit for Zoology 730 or 841.

**740 Behavioral Ecology U G 5**

Comparative study of mechanisms, ontogeny, function and evolution of behavior in its ecological and social contexts.

Wi Qtr. 3 1.5-hr cl. Prereq: Sr standing; 640 or Psych 601 or Zoology 640, or equiv with written permission of instructor. Not open to students with credit for Zoology 740.

**741 Social Behavior****741.01\* Lecture U G 4**

Theory of the evolution of social behavior in animals, from spacing patterns and mating systems through complex social systems including reproductive division of labor.

Sp Qtr. 2 1.5-hr cl. Prereq: 413.01 or 413.03 or 440 or 640 or 740, or Plnt Bio 313 or 413.01, or Zoology 313 or 340 or 413.01 or 413.03 or 440 or 640 or 740 recommended; or permission of instructor. Not open to students with credit for Zoology 741.01.

**741.02\*\* Laboratory U G 2**

DNA-based techniques for discerning genetic relatedness among individuals.

Sp Qtr. 6 hrs. Prereq: 741.01 or Zoology 741.01; and prereq or concur: Mol Gen 500 or 501; or permission of instructor. Not open to students with credit for Zoology 741.02.

**H783 Honors Research U 3-5**

A program of reading and research for each student, with individual conferences, reports, and Honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degrees BS or BA with distinction in zoology. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**800\*\* Zoological Literature and Preparation of Manuscripts G 3**

A study of library organization, bibliographies, and guides to zoological literature; the preparation of scientific papers for publication.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 15 cr hrs in EEOB, entomol, or zoology at the 600-level or above.

**880 Seminar G 1-2**

Required of all grad majors in evolution, ecology, and organismal biology during the first Au Qtr of registration.

Su, Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 10 cr hrs. Including any hours earned in Zoology 880. This course is graded S/U.

**881 Seminars on Selected Topics G 1-3**

Selected topics to be announced.

Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

A— Anatomy and Physiology

B— Behavior

C— Cell Biology

D— Ecology

E— Evolution

F— Marine Biology

G— Wildlife Biology

H— Fisheries Biology

**891 Interdepartmental Seminar in Environmental Biology G 2**

Selected topics treating the environmental aspects of organisms, populations, and ecosystems as they may relate to time, space, and human activities.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Given cooperatively by Entomology and Evolution, Ecology, and Organismal Biology. This course is graded S/U.

**999 Research in Evolution, Ecology, and Organismal Biology G 1-18**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Family and Consumer Sciences Education

151 Campbell Hall, 1787 Neil Avenue, 292-4487

**289 Introductory Field Experience U 2**

Directed observation-participation in family and consumer science middle and secondary programs.

Wi Qtr. Arr field experience, 1 hr cl. Prereq: 2nd yr standing; permission of instructor required; C+ in Math 116 or higher and English 110; speech class. Open only to students in HDFS Family Studies Option - FCS Track 1 or 2. Application for placement must be filed in dept the qtr preceding the experience. This course is graded S/U.

**294 Group Studies U 2-3,5**

Selected topics in family and consumer sciences education.

Prereq: Open to students who meet program's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**340^ Educative Process in Family and Consumer Sciences U 3**

Planning and organizing instructional materials and experiences for non-formal educational setting.

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 3rd yr standing with 10 cr hrs in human ec major; Fm&Hu Dv 364 or equiv, Fm Res M 341.01 or equiv, and Psych 100 or 300. Not open to FCS Ed teaching majors.

**367 American Family Issues and Social Action U 5**

Development of writing, presentation, and oral discussion skills while critically examining family and related community issues and appropriate advocacy and public policy making action.

Au, Wi, Sp Qtrs. 1 1-hr cl, 2 2-hr cl. Prereq: English 110 or 111 or equiv; Polit Sc 101 or 300, or Sociol 101; and soph standing. GEC/LAR course.

**446 Program Planning in Family and Consumer Sciences Related Occupations U 3**

Consideration of curriculum, instruction, evaluation, and other aspects of teaching in family and consumer sciences related occupations.

Su Qtr. 1 2.5-hr cl, arr hrs for observation and participation. Prereq: 440 or 640 and 2.50 CPHR. For vocational job training certification only.

**589 Field Experience**

Application for placement must be filed in dept the qtr preceding registration. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**589.02 Family and Consumer Sciences Extension U 3,5,10**

Supervised participation in roles and responsibilities of the extension agent in family and consumer sciences.

Su, Au, Sp Qtrs. Arr. Prereq: 3rd or 4th yr standing in human ec and written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**593 Individual Studies U 1-5**

Problems in various phases of family and consumer sciences education.

Su, Au, Wi, Sp Qtrs. 1 or more conf. H593 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Completion of individual study plan form. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**597 International Family Issues**

A practical problem-solving approach to the study of perennial family issues within the context of a given region of the world.

2 2.5-hr cl. Prereq: Sr standing. GEC/LAR contemporary issues course.

**597.01 Middle East U 5**

Au, Wi Qtrs.

**597.02 Sub-Saharan Africa U 5**

Au, Wi, Sp Qtrs.

**640 Workplace Education through Family and Consumer Sciences Education U G 4**

Principles and procedures for integrating and administering workplace education into family and consumer sciences education, including developing family, school, and community partnerships.

Wi Qtr. 2 2-hr cl; arr 15 hrs field experience. Prereq: 341 or equiv, 4th yr standing, and 2.50 CPHR; or grad standing with a 3.00 CPHR. Not open to students with credit for 440.

**660^ Entrepreneurship in Family and Consumer Sciences U G 3**

Application of knowledge to teaching entrepreneurship in family and consumer in secondary, adult, and higher education and/or formulating plans to become an entrepreneur using family and consumer sciences skills.

Sp Qtr. 1 2.5-hr cl.

**689 Family and Consumer Sciences Educational Field Experiences and Professional Development Seminars**

Directed observation and teaching experiences in family and consumer sciences programs to develop critically reflective and creative teachers through journaling, action research, and portfolio development.

Prereq: 4th yr or grad standing; admission to a teacher education program. Not open to students with credit for 589 series.

**689.01 Professional Roles and Responsibilities in Family and Consumer Sciences U G 2**

Development of skills to become a critically reflective family and consumer sciences teacher.

Su Qtr. 1 2-hr cl. Prereq: 341 or grad standing. Concur: 746.01 Repeatable to a maximum of 10 cr hrs.

**689.02 Collaboration for Instruction/Learning Enhancement U G 2**

Collaboration and cooperative learning strategies for working with students and teachers.

Au Qtr. 1 cl; arr field experience. Prereq: 2.50 CPHR and 4th yr or grad standing; 341 or 689.01 or equiv. Concur: 746.02 Repeatable to a maximum of 10 cr hrs.

**689.03 Context for Teaching and Learning U G 2**

Examination of the student and social context for teaching and learning through action research and portfolio development.

Wi Qtr. 1 cl; arr field experience. Prereq: 2.50 CPHR and 4th yr or grad standing; 341 or 689.02 or equiv; 743 or equiv or permission of instructor. Concur: 746.03. Repeatable to a maximum of 10 cr hrs.

**694 Group Studies U G 2-3,5**

Selected topics in family and consumer sciences education.

Prereq: Open to students who meet program's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**740 Trends in Family and Consumer Sciences G 3**

An overview of family and consumer sciences at the elementary, secondary, higher education, and adult levels; general trends in enrollment, curriculum, supervision, administration, and research.

Sp Qtr. 1 2.5-hr cl. Grad standing or permission of instructor.

**741 Curriculum in Family and Consumer Sciences G 3**

Critical analysis and development of curriculum in family and consumer sciences in terms of philosophy, design, and adaptability.

Au Qtr. 1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

**742 Culturally Responsive Teaching U G 3**

Principles and strategies for working with culturally diverse student populations, emphasizing teaching strategies and program modification.

Su Qtr. 1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

**743 Research Methods in Family and Consumer Sciences G 3**

Nature of research in various areas of the field; criteria for setting up a research problem; techniques for collecting and analyzing data.

Au Qtr. 1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

**744 Evaluation in Family and Consumer Sciences G 3**

Principles of evaluation, framework for evaluation, procedures for appraising student progress in the attainment of objectives, construction of evaluation instruments, analysis and interpretation of evaluation data.

Wi Qtr. 1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

**745 Supervision in Family and Consumer Sciences Education G 3**

Principles, models, and processes of supervision in the context of student teaching and other settings where instruction in family and consumer sciences takes place.

Au Qtr. 1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

**746 Instruction in Family and Consumer Sciences Education**

Learning and instructional theory, research, and strategies for family and consumer learning environments.

**746.01 Instruction for Learning in Family and Consumer Sciences Education U G 4**

Learning and developmental theory and its application to planning and instruction in family and consumer sciences education.

Su Qtr. 3-hr cl, 3-hr lab. Prereq: 341 or equiv; 2.50 CPHR and 4th yr or grad standing. Not open to students with credit for 341. Concur: 689.01.

**746.02 Instruction for Interpersonal Effectiveness U G 3**

Social cognitive theories and related discipline and instructional theories and implementation in family and consumer sciences learning environments.

Au Qtr. 2-hr cl, 3-hr lab. Prereq: 341 or 746.01 or equiv; 2.50 CPHR and 4th yr grad standing. Concur: 689.03 or permission of instructor.

**746.03 Instruction for Problem-Based Learning U G 3**

Cognitive learning and critical social theories and related instructional theories and their implementation in family and consumer sciences.

Wi Qtr. 2-hr cl, 3-hr lab. Prereq: 2.50 CPHR and 4th yr grad standing; 341 or 746.02 or equiv. Concur 689.03 or permission of instructor.

**791 Teaching Internship in Family and Consumer Sciences Education**

Ten week full-time internship in a family and consumer sciences education program under guidance of a cooperating teacher and university supervisor; includes reflective seminar.

Sp Qtr. Full-time for 1 qtr; 3-hr cl. Prereq: Completion of certification courses. Written permission of advisor. Not open to students with credit for 591.

**791.01 Designing Instruction U G 4**

Concur: 791.02 and 791.03.

**791.02 Facilitating Learning in Family and Consumer Sciences U G 4**

Concur: 791.01 and 791.03.

**791.03 Professional Development and Other Instruction Supporting Experiences U G 2**

Concur: 791.01 and 791.02.

**793 Individual Studies G 1-5**

Problems in various phases of family and consumer sciences education. Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**797 Interdepartmental Seminar G 2-4**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Graduate standing or permission of instructor. Repeatable.

**842\* Family and Consumer Sciences in Higher Education G 3**

Present status and function of family and consumer sciences at the higher education level; faculty involvement within a family and consumer sciences unit and in the overall institutional setting.

Wi Qtr. 1 3-hr cl. Prereq: 740 or equiv with written permission of instructor.

**843 Seminar in Family and Consumer Sciences Education**

1 2.5-hr cl.

**843.01 Family and Consumer Sciences Education Research G 3,5**

Wi Qtr. Prereq: 743 or equiv. Repeatable to a maximum of 15 cr hrs.

**843.02 Special Topics in Family and Consumer Sciences Education G 3,5**

Topic to be announced.

Repeatable to a maximum of 15 cr hrs.

**846 Family and Consumer Sciences Teaching Strategies and Learning Theory G 3**

Innovative use of teaching methods; relationship to learning theory.

Sp Qtr. 1 2.5-hr cl. Prereq: A course in educational psychology.

**860 Change Process in Vocational Education G 3**

Study of change principles, theories, and practice related to vocational, technical, and extension education.

Wi Qtr. 1 2.5-hr cl. Prereq: Professional experience or grad courses in vocational education.

**889 Internship**

Guided participation to enhance professional competencies in selected areas.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing in family and consumer sciences and permission of instructor. A maximum of 10 cr hrs will apply toward master's degree requirements. Application with program must be completed in qtr prior to qtr internship is to take place. Travel and subsistence costs must be borne by the student.

**889.01 Instruction G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**889.02 Extension G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**889.03 Business, Industry, or Communications G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**889.04 Administration or Supervision G 1-15**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 2-3,5**

Selected topics in family and consumer sciences education.

Prereq: Open to students who meet program's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**899 Interdepartmental Seminar G 1-5**

See 797 Interdepartmental Seminars.

**942\* Administration in Family and Consumer Sciences G 3**

Principles, trends, problems, and evaluative criteria related to family and consumer sciences units in higher education administrative structure; functions, responsibilities, and qualifications of family and consumer sciences administrative personnel.

Su Qtr. 1 3-hr cl. Prereq: MS degree in human ecology/family and consumer sciences.

**946\* Program Analysis and Design in Family and Consumer Sciences G 3**

Theoretical approach to program development; innovation and experimentation in program design in family and consumer sciences at different levels; analysis and restructuring of existing programs; climate and strategies for change.

Sp Qtr. 1 2.5-hr. Prereq: 846 or written permission of instructor.

**993 Individual Studies G 1-10**

Problems in various phases of family and consumer sciences education chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Completion of plan for individual study form. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research: Thesis G 1-18**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research: Dissertation G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Family Medicine

B0902B University Hospitals Clinic, 456 West 10th Avenue, 293-8792

### 793 Individual Studies in Family Practice P 4,8,16,24

Experience with family physician-preceptor or family practice residency programs; student must achieve objectives which fall within the curriculum objectives of the Dept of Family Medicine.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Med Coll 663 and written permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

## Family Resource Management

231 Cambell Hall, 1787 Neil Avenue, 292-8063

### 243 Consumer Problems U 5

Common imperfections in the consumer-market interface which manifest themselves in ripoffs, misrepresentations and deceptions; remedies for problems.

Au, Sp Qtrs. 3 1.5-hr cl. Required for Consumer Affairs option. GEC social science organizations and politics course.

### 260 Family Financial Management I U 5

The management of family financial resources; topics include financial planning and budgeting, insurance, credit, and savings and investments.

Au, Sp Qtrs. 2 2-hr cl. A grade of 2.7 in 260 is a prereq: 560. SS Admis Cond course. This course is available for EM credit.

### 294 Group Studies U 2-5

Selected topics in family resource management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

### 340 American Households: Indicators of Economic Status U 5

Living arrangements and characteristics of American population, distribution of income, and government policy as determinants of the economic status of households.

Au, Wi Qtrs. 3 1.5-hr cl. Prereq: Stat 133 or 135 or 145; or Agr Econ 205; or permission of instructor. Not open to students with credit for 662. BER/GEC/LAR course.

### 351 Interiors Planning

Application of design principles to interior furnishings and visual merchandising with consideration of aesthetic, economic, and social/psychological factors affecting choice.

Au Qtr. Prereq: Txl&Clo 270.

#### 351.01 Interiors Planning: Visual Merchandising U 4

Application of interiors planning to visual merchandising.

3 cl, 1 2-hr lab. Not open to students with credit for 351.

#### 351.02 Interiors Planning: Residential U 5

Application of interiors planning to residential settings.

3 cl, 2 2-hr labs. Not open to students with credit for 351.

### 360 Family Financial Management II U 5

Introduction to family financial management applications through a case study approach.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 260. Open only to Family Resource Management majors and Consumer Affairs minors. Required for Family Financial Management Option.

### 362^ Resource Management Issues for Women U 3

Issues and choices faced by women in their employment and resource management, as well as policies affecting women in these roles.

Wi Qtr. 2 1.5-hr cl. Prereq: Agr Econ 200 or Econ 100 or 200. GEC course.

### 425 Housing: Physical Environment

The physical aspects of both housing and the housing environment with concern for their relationships to individual and family satisfactions with housing choices.

Sp Qtr.

#### 425.01 Housing: Physical Environment Issues U 3

Physical aspects of both housing and housing environment with concern for their relationships to individual and family satisfaction with housing choices.

Sp Qtr. 2 1.5-hr cl. Not open to students with credit for 425.

#### 425.02 Housing: Physical Environment Design Application U 1

Application of the physical aspects of housing to the needs of families and individuals. Students will produce plans for house and kitchen designs.

1 2-hr cl. Concur: 425.01.

### 443 Solutions to Consumer Problems U 5

Regulatory and non-regulatory solutions to imperfections in the consumer-seller interface are considered.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 243. Required for Consumer Affairs option.

### 451^ Residential Interiors: Problems in Conceptual Visualization U 5

Exploration toward the solution of interior, environmental, and spatial problems based on space analysis and planning; emphasis on the functional spatial relationships of residential interior space to furnishings.

Wi Qtr. 3 cl, 1 2-hr lab; 2 hrs arr. Prereq: 351, En Graph 121, or permission of instructor.

### 543 Consumer Decision Making U 5

The process of decision making by consumers is analyzed and implications for consumers, sellers, and policy makers are derived.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: Bus-Mktg 650 or permission of instructor. Required for Consumer Affairs option.

### 560 Family Financial Management III U 5

Analyze and evaluate financial decisions by families at various points in family life cycle and apply economic principles to development of aids used by families facing financial decisions.

Au, Sp Qtrs. 2 2.5-hr cl. Prereq: a grade of 2.7 or better in 260, 360 or 341.02, Bus-Fin 620.

### 567 Families in Business U 5

Explore family business topics, including family dynamics, conflicts and relationships relative to business formation and growth, strategic management, professionalization, and succession.

Au, Sp Qtrs. 3 1.5-hr cl.

### 589 Field Work

Observation and application of concepts and principles learned in family resource management course work to a professional setting.

Su, Au, Wi, Sp Qtrs. 1 cl, arr. Department application must be filed two quarters in advance.

### 589.02 Field Experience-Financial Management U 3-5

Prereq: 110 earned cr hrs, 2.00 CPHR, 560, Acct&MIS 211, 212 and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 593 Individual Studies U 1-5

Problems in various phases of family resource management.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. Repeatable to a maximum of 10 cr hrs. 1 or more conf. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment. This course is graded S/U.

### 595 Professional Development U 2

The professional: performance, role in society, position securement, involvement in organizations, and continuing development.

Su, Au, Wi, Sp Qtrs. 3 1.5-hr cl. Prereq: 372 or 243 and 3rd yr standing. This course is graded S/U.

### 611 Consumer Housing Problems U G 5

Production and allocation of housing and current housing problems. Includes service-learning experience related to data collection and analysis and neighborhood development.

Sp Qtr. 2 2-hr cl. Prereq: 340 and Econ 200.

### 636 Group Leadership Practicum for Family Financial Management U 5

Financial advising practicum. Students are group leaders for 360, conduct group sessions, assign tentative grades and write comments for presentations and reports.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 260; 340; minimum of B+ in 360; permission of instructor.

### 644 Quantitative Methods in Consumer Affairs U 5

Application of research methods and analysis of data to facilitate decision-making with respect to consumer affairs.

Au, Sp Qtrs. 3 1.5-hr cl. Prereq: 443, 543, Agr Econ 205 or Stat 133 or 145, Cptr/Inf 101 and a second writing course. Required for Consumer Affairs option.

### 645^ Consumer Research Practicum U 5

Solutions of consumer protection or satisfaction problems, including data collection and analysis, report writing, and oral presentation of research.

Sp Qtr. 1 2-hr cl. Prereq: 443, 543, 644; Communic 328, permission of instructor, 2.00 CPHR.

### 651^ Residential Interiors: History of Design and Decoration U G 4

Analysis of furniture styles from antiquity through the present with emphasis on aesthetic, economic, and social implications as well as influencing philosophies.

Wi Qtr. 3 1.5-hr cl. Prereq: 351 or permission of instructor. Not open to students with credit for 551.

**660 Family Financial Management Application U G 5**

Family financial management concepts are applied to evaluate financial goals and prepare a comprehensive financial plan for a family.  
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 560.

**694 Group Studies U G 1-5**

Selected topics in family resource management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable. This course is graded S/U.

**698.02 Foreign U G 1-15**

Repeatable. This course is graded S/U.

**711<sup>^</sup> Housing Issues G 3**

Study of interrelationship between housing product and process and social and economic environments.

Sp Qtr. 2 1.5-hr cl.

**720 Aging and Design U G 3**

Analysis and development of designs for products and environment related to residential spaces for older adults based on environmental adjustment theories.

Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in Allied Medicine.

**738 Graduate Study in Family Resource Management G 2**

Introduction to Family Resource Management/Consumer Science research and curriculum. Provides orientation to research areas and methods and teaching. Supports planning for successful graduate study.

Au Qtr. 1 2-hr cl.

**739 Household Economic Status: Measurement and Analysis G 5**

Measurement and analysis of household economic status including key concepts, determinants, policy implications, and implications for research.

Au Qtr. 2 2-hr cl. Prereq: Grad standing.

**740 Theories and Models of Family Resource Management G 4**

Aspects of family life are analyzed from the perspective of family resource management theories; emphasis is placed on empirical implications of the theories.

Wi Qtr. 2 1.5-hr cl. Prereq: 739, and econ 501 or 705 or equiv.

**741 Managerial Concepts and Their Measurement G 4**

Tools and techniques which are applicable to resource allocation decisions in a specific household.

Sp Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 739 and 740.

**782<sup>\*</sup> Classroom Application of Family Resource Management Subject Matter in Higher Education G 3**

Analysis of educational research and theory applied to teaching Family Resource Management subject matter in higher education.

Wi Qtr. 2 1-hr cl, 1-hr arr.

**791 Research Practicum in Family Resource Management G 2-5**

Supervised participation in research; involvement may include data collection and analysis or manuscript preparation; credit will be determined by involvement and level of responsibility.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing, a statistics course, and permission of instructor. Repeatable to a maximum of 20 cr hrs. Supplements individual studies (FM RES M 793) and facilitates students' ability to participate in research.

**792 Teaching Practicum in Family Resource Management G 2-5**

Supervised participation in college teaching; nature and degree of involvement are based on student's preparation; credit will be determined by involvement and level of responsibility.

Su, Au, Wi, Sp Qtrs. Prereq: 782, Grad standing, and permission of instructor. Repeatable to a maximum of 20 cr hrs. Supplements individual studies (FM RES M 793) to facilitate students' ability to document their teaching experience.

**793 Individual Studies U G 1-5**

Problems in various phases of family resource management chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**841<sup>\*</sup> Family Resource Management: Development and Theory G 3**

Historical development and present trends in family resource management with emphasis on theory and practices.

Au Qtr. 2 1.5-hr cl. Prereq: 739, 740, 741 or written permission of instructor.

**862<sup>^</sup> Household Economic Status: Theory and Research G 5**

Interpretation of theory and research related to household economic status.

Wi Qtr. 2 2-hr cl. Prereq: 739, Econ 705 and 706 or equiv, and Stat 529 or equiv.

**872<sup>\*</sup> The Consumer in American Society G 3**

Analysis of the elements involved in the consumer interest, interrelationships of the elements, cost effectiveness of these methods, and distributional impacts of the alternatives.

Wi Qtr. 2 1.5-hr cl. Prereq: Econ 705 and 706 or equivs; and 3 cr hrs of stat.

**881<sup>^</sup>\* Quantitative Methods in Family Resource Management G 5**

Multivariate statistical methods are applied to research questions in family resource management. The emphasis is on advanced topics relevant to analysis of cross-sectional data.

Au Qtr. 2 2.5-hr cl. Prereq: Basic course in statistics and permission of instructor.

**894 Group Studies G 1-5**

Selected topics in family resource management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**895 Seminar in Family Resource Management**

3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs including cr hrs in 822.

**895.01 Consumer Economics G 3-5**

Repeatable to a maximum of 15 cr hrs.

**895.02 Family Finance G 3-5**

Repeatable to a maximum of 15 cr hrs.

**895.05 Household Technology G 3-5**

Repeatable to a maximum of 15 cr hrs.

**895.06 Housing G 3-5**

Repeatable to a maximum of 15 cr hrs.

**993 Individual Studies G 1-5**

Problems in various phases of family resource management chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research: Thesis G 1-18**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research: Dissertation G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Food Science and Technology

122 Vivian Hall, 2121 Fyffe Road, 292-6281. Fax: 292-0218

Marketing Dairy Products

See Agr Econ 426. Offered in cooperation with Agricultural Economics.

Advanced Food Process Engineering

See Agri Eng 684. Offered in cooperation with Agricultural Engineering.

**170 Wine and Beer in Western Culture U 3**

The role of wine and beer in western culture with emphasis on the geographic origins, production techniques, and stylistic considerations.

Au Qtr. 2 1.5-hr cl. Not open to students with credit for Hort 170.

**201 The Science of Food U 5**

Food and nutrition in modern civilization; principles involved in assembling, processing, and distribution of food; and the role of science, industry, and government in meeting food needs.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or 113 or equiv. Not open to students with credit for Fd Sc&Nu 100 or Food Tec 241. BER/GEC/LAR course.

**210 Dairy Products Evaluation U 2**

Major commercial dairy products are evaluated following the rules of the National Dairy Products Evaluation Contest. Travel may be required.

Au, Sp Qtrs. 1 3-hr cl. Prereq: Permission of instructor. This course is graded S/U.

**289 Food Industries Field Experience U 3**

Ten weeks practical experience or equivalent in an approved food plant or laboratory; written report required.

Su, Au, Wi, Sp Qtrs. Open only to students majoring in food science.

**401 Introduction to Food Processing U 3**

Unit operations in food processing, basic elements of food processing equipment, product formulation, food manufacturing, quality control, cleaning, and sanitizing.

Au Qtr. 1 cl, 2 3-hr labs. Not open to students with credit for 537.

**410 HACCP Analysis U 3**

Principles of hazard analysis as applied to the food industry. Students will develop a HACCP plan.

Wi Qtr. 3 cl. Prereq: 401 or Anim Sci 355.01 and 355.02.

**493 Individual Studies U 1-5**

Individual study course to permit undergraduate students to explore in-depth selected areas of food science and nutrition.

Su, Au, Wi, Sp Qtrs. 3, 6, 9, 12, or 15-hr lab. H493 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**494 Group Studies U 3-5**

Group studies on selected topics in food science and nutrition.

Su, Au, Wi, Sp Qtrs. Arr. H494 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**541 Physical Properties of Foods U G 4**

Elements of identification and measurement of physical properties of foods and application to food systems.

Wi Qtr. 3 cl, 2-hr lab, 1-hr workshop. Not open to students with credit for 537.

**589 Professional Experience U 5**

Ten weeks of supervised structured in-depth industrial experience in selected food related subjects.

Su, Au, Wi, Sp Qtrs. Prereq: 20 cr hrs of 500-level courses or above in major field, and permission of instructor. Open only to students majoring in food science and nutrition. Repeatable to a maximum of 10 cr hrs. Experience must be obtained with organization approved by the dept.

**597 Contemporary Issues in Food Science and Nutrition**

Au Qtr. Prereq: Sr standing. GEC contemporary world course.

**597.01 Alcohol and Society U 5**

The historical, nutritional, medical, social, technical, and economic aspects of the use of beverage and industrial alcohol.

Au Qtr. 2 2-hr cl.

**601 Food Analysis U G 5**

Basic composition, chemical structures and properties of foods; and chemical and instrumental analyses of food components.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: Chem 252. Not open to students with credit for 521 or 522.

**605 Advanced Food Chemistry U G 4**

Intensive coverage of the chemical reactions of food components with emphasis on the reaction mechanisms responsible for changes in food products.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 601, Chem 252 and Biochem 511. Not open to students with credit for 641.

**610 Processing of Fluid Milk and Related Products U G 4**

Principles involved in the production, processing, and marketing of high quality, safe, and nutritious milk and milk products.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 401 and Microbiol 509. Not open to students with credit for 631.

**611<sup>^</sup> Cheese and Fermented Foods U G 4**

Principles and practices related to the manufacture, processing, distribution, and marketing, nutritional value and safety of fermented foods.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 401, 522, or 602, and Microbiol 509. Not open to students with credit for 634. Field trips may require extra time for students.

**613 Fruit and Vegetable Processing U G 4**

Commercial processing of fruits, vegetables and related products. The effect of processing and raw product chemistry on final product quality.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 401. Not open to students with credit for Hort 641.

**621 Food Additives U G 3**

Chemical and physical nature of food additives; functions and effects on chemical, rheological, microbiological, and nutritional properties of foods.

Au Qtr. 3 cl. Prereq: 15 cr hrs in food science or related area.

**630 Principles of Food Processing U G 4**

Principles of science and engineering applied in food processing and their unit operations including concentration, separation, and thermal sterilization processes.

Wi Qtr. 3 cl, 2-hr lab. Prereq: 541 or grad standing or permission of instructor.

**632 Sensory Properties and Evaluation of Foods U G 3**

Fundamentals of sensory perception, taste, and odor classification and threshold values; subjective and objective evaluation of foods; panel selection and interpretation of results; industrial applications.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: Stat 125 or 145 or Agr Educ 387 or Agr Econ 205 or Agronomy 210 or Animl Sc 210. Not open to students with credit for 531.

**636 Food Microbiology U G 5**

Microorganisms in relation to the production, processing and handling of food with emphasis on sanitation and public health problems.

Au, Sp Qtrs. 3 cl, 2 2-hr labs, 1 discussion. Prereq: Microbiol 509 or 521. Not open to students with credit for 622 or Microbiol 636. Cross-listed in Microbiology.

**640 Food Regulations U G 3**

Food laws, regulations and the technical control of processed foods.

Wi Qtr. 3 cl. Prereq: 401. Not open to students with credit for 640.01 or Hort 640.

**648 Essentials of Food Plant Operation U G 3**

An in-depth presentation of the special factors affecting food plant organization, production, procurement, distribution, and the interaction required to develop plant operations.

Sp Qtr. 3 cl. Prereq: 401. Not open to students with credit for Hort 648.

**649 Packaging Materials and Methodology U G 4**

A discussion of terminology and literature of commercial packaging, principal methods of packaging, and principles of selecting packaging materials.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 541, 601. Not open to students with credit for Hort 649.

**650 Food Product Development U G 5**

Development of a new food product including generation of concepts, consumer panel testing, development of prototypes, process optimization and consumer testing.

Su Qtr. 2 cl, 2 3-hr labs, 1 hr arr. Prereq: 621; 401 or 630; one course in stat.

**H683 Honors Projects U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in honors program, and permission of honors project supervisor. Repeatable to maximum as H683 or in combination with 293, 593, H593, H599, 693 or H693. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**692 Workshop in Milk and Food Sanitation U 1-2**

Five day in-depth program on fundamentals of milk and food protection; designed for individuals interested in food processing, distribution; quality control, public health, and regulatory activities.

Sp Qtr. 15 or 30 hrs cl contact during the week between winter and spring qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 3 cr hrs.

**693 Individual Studies U G 3-5**

Individual project studies of current problems; planning, conducting, and reporting research.

Su, Au, Wi, Sp Qtrs. 9, 12, or 15-hr lab. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Selected topics in food science and technology.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**696 Technical Problem Solving U G 5**

Analysis of technical problems in food science; fostering creative thinking to the approach and solution of problems; preparation and oral presentation of papers.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 541, 602, 4th yr standing, second writing course, and prereq or concur: 622. Not open to students with credit for 695. GEC course.

**736 Advanced Food Microbiology G 3**

Microbiological aspects of food preservation, detection of microbiological contaminants, hazards, and microorganisms of public health significance. Wi Qtr. 3 cl. Prereq: 636 or Microbiol 636, and Chem 123. Not open to students with credit for 701 or Microbiol 736. Cross-listed in Microbiology.

**761 Advanced Nutrient Utilization I U G 5**

In-depth treatment of digestion, absorption, transport, and utilization of dietary carbohydrates and fat for energy production and fat deposition in humans and other higher animals.

Wi Qtr. 5 cl. Prereq: Biochem 511 or equiv and Humn Ntr 310 or Animl, Dairy, Ptry Sc 430 or equiv.

**762 Advanced Nutrient Utilization II U G 5**

In-depth treatment of digestion, absorption, transport, and utilization of proteins, amino acids, and vitamins in humans and other higher animals; energy reactions and requirements.

Sp Qtr. 5 cl. Prereq: 761.

**799 Teaching Experience in Food Science and Nutrition G 1-6**

Teaching at the higher education level, instructional development under faculty guidance, experience in testing and evaluation of students, and analysis of teaching performance.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing and prior or concurrent enrollment in teaching methods course or workshop. Provides teacher training and evaluation which is recognized on transcript.

**820 Flavor Chemistry G 3**

Chemical properties, formation mechanisms, isolation, separation, identification and food applications of flavor compounds.

Wi Qtr. 3 cl. Prereq: 601, 605, and 621.

**821\*\* Food Lipids G 3**

Chemical, physical, and biological properties of food lipids.

Au Qtr. 3 cl. Prereq: 634 or permission of instructor.

**822\*\* Food Proteins G 3**

Sources of chemical, physical, and biological properties of food proteins; effect of food composition, handling, and processing of protein characteristics and functionalities.

Wi Qtr. 3 cl. Prereq: one course in physical chemistry or permission of instructor.

**830 Advanced Studies in Nutrition**

Advanced concepts in nutrition.

Au, Wi, Sp Qtrs. 3 or 5 cl. Prereq: 761, 762; Anim Sci 530 or Humn Ntr 610; 10 grad cr hrs in physiology. Not open to students with credit for Anim Sci 830 or Humn Ntr 830. Cross-listed in Animal Sciences, and Human Nutrition and Food Management.

**830.01\* Energy/Lipids G 5**

Sp Qtr. 5 cl. Prereq: Fd Sc&Te 761.

**830.02\*\* Vitamins/Minerals G 5**

Wi Qtr. 5 cl. Prereq: Humn Ntr 763.

**833 Research Methods in Food Science G 4**

Methods of analysis of foods including chromatography, spectroscopy, electrophoresis, thermal and gravimetric techniques, and rheology.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Permission of instructor.

**850 Seminar**

Graduate student-staff participation in a study of teaching and research trends and opportunities; critical analysis of research approaches, findings, and publications.

**850.01 Food Science G 1**

Au, Wi Qtrs. Repeatable to a maximum of 6 cr hrs.

**861 Topics in Advanced Nutrition G 3**

Systematic treatment and evaluation of areas of publications of current interest in nutrition; topics will be announced quarterly.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 762. Repeatable to a maximum of 9 cr hrs.

**868\* Molecular Biology Techniques G 5**

Combined lecture/laboratory in the techniques of nucleic acid isolation, analysis, hybridization, sequencing, cloning, expression, and associated biotechnologies.

Su Qtr. 5 cl, 5 3-hr labs. Prereq: Biochem 521 or 613 or equiv. Not open to students with credit for Anim Sci 868. Cross-listed in Animal Sciences.

**892 Interdepartmental Seminar in Plant Physiology G 1**

Students will present seminars on their research or related topics in plant physiology and/or attend seminars by local and visiting researchers.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Not open to students with 12 cr hrs in Agronomy 892, Biochem 892, Plnt Bio 892, or Hort 892. Repeatable to a maximum of 12 cr hrs. Repeatable hrs include cr hrs earned in Agronomy 892, Biochemistry 892, Horticulture 892 and Plant Biology 892. Cross-listed in Agronomy, Biochemistry, Horticulture, and Plant Biology. This course is graded S/U.

**898 Interdepartmental Seminar in Nutrition G 1**

A seminar in nutrition and related fields.

Sp Qtr. Repeatable to a maximum of 5 cr hrs. Cross-listed in Animal Sciences, and Human Nutrition and Food Management. This course is graded S/U.

**993 Individual Studies G 1-5**

Research experience and preparation of technical paper.

Su, Au, Wi, Sp Qtrs. Prereq: 15 cr hrs of grad level courses in food science or technology. For Plan B, MS degree students only. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**998 Research: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Food, Agricultural and Biological Engineering

200 Agricultural Engineering Building, 590 Woody Hayes Drive, 292-6131

**225 Introduction to Food, Agricultural and Biological Engineering U 3**

Principles of engineering problem solving and communications, statistical description and inference applied to agricultural, food and environmental problems.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: Soph standing in eng. Third writing course component. GEC course.

**325 Transfer Processes in Food, Agricultural and Biological Systems U 3**

Material and energy balances in food, agricultural and biological systems. Introduction to heat, mass, momentum transfer. Psychrometrics and applications in conditioning of air.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: Math 153 and enrollment as an engineering major.

**373 Principles of Soil and Water Engineering U 3**

Applications of level and chain surveying, hydrology, and soil dynamics to problems in Food, Agricultural and Biological Engineering.

Sp Qtr. 2 cl, 1 4-hr lab. Prereq: Eng Mech 220 or 400 or Mech Eng 410. Some survey/data gathering labs for specific course projects will be conducted away from campus though completed within lab period.

**425 Analysis of Elementary Biological-Physical Systems U 4**

Mathematical model formulation and analysis techniques developed and applied to elementary biological and physical systems.

Wi Qtr. 3 cl, 2-hr lab. Prereq: Math 255 or 415.

**481 Introduction to Food Process Engineering U 4**

Introduction to engineering operations in food processing, process control and instrumentation, emphasizing heat transfer and fluid flow.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Math 151 and Physics 112. Open to non-engineering majors only. Offered in cooperation with Food Science and Technology.

**489 Professional Practice U 2**

Preparation and submission of a comprehensive report, based on a pre-assigned outline, of actual co-op employment in industry.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to Co-Op Program in Food, Agricultural and Biological Engineering. Open only to dept majors. Repeatable to a maximum of 10 cr hrs.

**525 Electrical Power Systems for Agriculture U 4**

Design and specification of systems and components essential for the distribution of electrical power and for the control of electrical systems for agricultural production units.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 425.

**545 Agricultural Structures U G 4**

Analysis and design of frames and members for agricultural structures.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Eng Mech 220 or 400 or Mech Eng 410.

**565 Utilization of Energy in Agriculture U G 4**

Study of motive and stationary power needs of agriculture, mechanics of traction, characteristics of power sources, morphology of off-the-road vehicle design.

Sp Qtr., 3 cl, 1 2-hr lab. Prereq: 425 and Mech Eng 501.



**584 Food Process Engineering U G 4**

Principles of food process engineering with emphasis on design of freezing and drying equipment and thermal sterilization processes.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Mech Eng 501.

**593 Individual Studies U G 1-5**

Advanced study of problems not included in regular courses of this department.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**605 Measurement and Instrumentation U G 4**

Analysis and design of measurement systems; data acquisition, signal conditioning, error and noise control and transducers used in food, agricultural and biological systems.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 525 or Elec Eng 300 or grad standing in engineering.

**625 Modeling and Design of Biological Systems U G 4**

Application of transport processes, enzyme kinetics and the simulation of plant and animal growth to the analysis and design of biological systems and processes.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 425, Cptr/Inf 541, Mech Eng 510 or equivs.

**645 Environmental Engineering of Agricultural Structures U G 4**

Functional requirements and principles involved in housing animals and crops; analysis of factors and properties affecting energy exchanges with the environment.

Wi Qtr. 4 cl. Prereq: 325, Eng Mech 430 or Mech Eng 430, and Mech Eng 510.

**650 Design of Waste Management Systems U G 4**

Application of bioengineering principles of pollution control in the design of management systems for wastes from food and fiber production, storage, and processing operations.

Sp Qtr. 3cl, 1 3-hr lab. Prereq: Sr standing in engineering, or permission of instructor.

**673 Design of Agricultural Water Management Systems U G 4**

Basic knowledge of water management principles and introduction to agricultural drainage and irrigation methods and their applications.

Wi Qtr. 2 2-hr cl. Prereq: 573 or grad standing in engineering or permission of instructor.

**684 Food Extrusion Processing U G 3**

Principles of food extrusions processing including extruder design, transport phenomena, chemical/physical changes during extrusion, product quality, automation. Economics discussed in relation to food industry.

Sp Qtr. 1 2-hr cl; 1 3.5-hr lab. Prereq: Senior standing for undergraduates, grad standing or permission of instructor. Lab time includes travel time for plant visits.

**692 Similitude Theory and Applications U G 3**

Similitude theory and applications in engineering and bio-engineering experimental research and development.

Sp Qtr. 3 cl. Prereq: Sr standing in engineering.

**693 Individual Studies U G 1-5**

Work on problems that are not included in regular courses; practice in development, organization, solution, and report on problems of student's choosing.

Su, Au, Wi, Sp Qtrs. Prereq: 15 cr hrs of 300 level or higher Food, Agricultural and Biological Engineering courses. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Advanced studies in Food, Agricultural and Biological Engineering with principal emphasis on design.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**695 Professional Development U G 1**

Needs and programs for professional development in engineering related to food, agriculture, and environment; communication for professional advancement, engineering ethics, and responsibilities to society.

Au Qtr. 1 1-hr cl. Prereq: 3rd yr standing in Food, Agricultural and Biological Engineering. GEC course.

**724 Capstone Design in Food, Agricultural and Biological Engineering I U G 2**

Methodology of design; practice in the design and communication of a specific system within the student's area of specialization.

Wi Qtr. 2 1-hr cl. Prereq: 525. GEC course.

**725 Capstone Design in Food, Agricultural and Biological Engineering II U G 3**

Continuation of 724.

Sp Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 724. GEC course.

**735 Probabilistic Methods in Engineering Design U G 4**

Application of concepts of probability, random variables, statistical inference, multiple regression and correlation analysis to making reliable engineering design decisions.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Stat 427 or permission of instructor.

**H783 Undergraduate Honors Program Research U 1-3**

Individually supervised research and project work for Honors program students. Student presentations and thesis writing included.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Honors standing; permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**784 Advanced Food Process Engineering U G 3**

Application of heat and mass transfer, fluid flow, food properties, and food processing constraints in the design and selection of food process equipment. Sastry.

Sp Qtr. 3 cl. Prereq: Chem Eng 420, Mech Eng 510, or equiv. Offered in cooperation with Food Science and Technology.

**810 College Teaching in Engineering G 3**

Preparation for instruction in engineering at the college level. Focuses on skills, strategies and issues common to university teaching and engineering instruction more specifically.

Sp Qtr. 1 3-hr cl. This course is graded S/U.

**850 Departmental/Graduate Seminar G 1**

Lecture and discussion of current topics related to food, agricultural and biological engineering presented by faculty, staff, graduate students, and guests speakers.

Au, Wi, Sp Qtrs. 1 cl. Repeatable. This course is graded S/U.

**894 Group Studies G 1-5**

Graduate studies in Food, Agricultural and Biological Engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**895 Graduate Professional Development G 2**

Overview of FASE and University requirements and procedures for a graduate program. Professional development topics pertinent to successful careers in research and development and academia.

Wi Qtr. 2 1-hr cl or 1 2-hr cl. Prereq: Grad standing.

**999 Research G 1-18**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Forestry

School of Natural Resources

210 Kottman Hall, 2021 Coffey Road, 292-2265

General Prerequisites for Courses Numbered 200

Unless otherwise indicated, the prerequisites for 200-level courses are 45 cr hrs in collegiate courses, exclusive of ROTC and phys ed; or specified course(s) numbered 100-199.

General Prerequisites for Courses Numbered 300 and 400

Unless otherwise indicated, the prerequisites for 300- and 400-level courses are 90 cr hrs in collegiate courses, exclusive of ROTC and phys ed; or specified course(s) numbered 100-399.

General Prerequisites for Courses Numbered 500

Unless otherwise indicated, the prerequisites for 500-level courses are 15 cr hrs in courses in the same discipline numbered 200 or higher, or 10 cr hrs in courses numbered 200 or higher in the same discipline, plus 10 cr hrs in courses numbered 200 or higher in specified allied disciplines; or baccalaureate degree.

**221 Biology and Identification of Woody Forest Plants U 5**

Field identification of trees, shrubs, and vines in temperate forest ecosystems; basic biological principles of morphology, reproduction, growth, genetics, and taxonomy of major woody species.

Au Qtr. 3 cl, 1 4.5-hr lab. Prereq: Nat Res 201 and 203 or permission of instructor.

**322 Forest Ecosystems U 5**

Structure and function of temperate forest ecosystems; field-oriented study of the relationships among ecosystem components, and of the composition and successional dynamics of forest communities.

Au Qtr. 3 cl, 1 4.5-hr lab. Prereq or concur: 221, Nat Res 201 and 203 or permission of instructor.

**323 Forest Biometry U 5**

A study of the quantitative decision tools necessary to measure the forest resource; confidence and probability measures of land area, timber, water, wildlife, and recreation.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: Nat Res 222.

**333 Silviculture****333.01 Lecture U 3**

Ecological principles and practical applications of methods for controlling forest ecosystem structure and function, including regeneration and tending approaches which support a variety of benefits.

Sp Qtr. 3 cl. Prereq or concur: Nat Res 201 and 203 or permission of instructor.

**333.02 Field Laboratory U 3**

Field-oriented course stressing prescription of silvicultural practices and systems for achieving and sustaining desired forest ecosystem conditions; emphasis on management of selected temperate forest types.

Sp Qtr. 1 hr cl and 1 5-hr lab, 1 or 2 all-day field trips. Prereq or concur: Nat Res 201 and 203 or permission of instructor.

**432 Forest Industries II U 5**

A detailed study of the harvesting and manufacturing processes used to produce forest products; laws governing workshop safety and environmental pollution; transportation of forest products.

Wi Qtr. 5 cl. Prereq: Nat Res 201 and 203 or permission of instructor.

**533 Forest Field Laboratory U 6**

An intensive field course stressing compilation, analysis, and interpretation of mensurational and ecological data in the preparation of alternative silvicultural prescriptions for forested areas.

Au Qtr. Arr cl. Prereq: 321 and 323. Offered off-campus between Labor Day and first day of Autumn Quarter.

**593 Individual Studies U G 2-5**

Special problems in the field of forestry and forest products.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**French**

248 Cunz Hall, 1841 Millikin Road, 292-4938

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 101.51, etc.) or, for those with high school French, 102.66-103-104 or 103.66-104 and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence through the 104 level.

**101 Elementary French I**

Introduction to French; development of listening, reading, speaking, and writing skills.

Su, Au, Wi, Sp Qtrs. Not open to students with credit for 100.02 or to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hours before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**102 Elementary French II**

Continuation of 101, further development of listening, reading, speaking, and writing skills.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Prereq: 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 101.01 or 5 cr hrs in 101.51, or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students who complete 5 hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

**102.66 Intensive French for Review I U 1-5**

Classroom track; review of basic structures, vocabulary, and skills needed for entry into 103.

Prereq: 2 or more years of high school French and placement in 101 by placement exam. Not open to native speakers of French through regular course enrollment or EM credit or to students with credit for 101.01, 101.51, 102.01, or 102.51. Repeatable to a maximum of 5 cr hrs. Students must register for and complete 5 cr hrs during the qtr. Students may register for and complete 102.66 for 1-5 cr hrs. Progress is sequential, for each hour, with a proficiency of 80% required to move to the next credit hour.

**103 Intermediate French I**

Continued study of French; development of listening, reading, speaking, and writing skills; readings based on contemporary French culture and literature.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

**103.01 Classroom Track U 5**

Prereq: 102.01, or 102.66, or 5 cr hrs of 102.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**103.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 102.01, or 102.66, or 5 cr hrs of 102.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students may register for 102.51 and 103.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**103.66 Intensive French for Review II U 1-5**

Classroom track; intensive review of basic structures, vocabulary, and skills needed for entry into 104.

Prereq: 101.01 or 5 cr hrs of 101.51, or 3 or more yrs of high school French and placement into 102 by placement exam. Not open to native speakers of French through regular course enrollment or EM credit or to students with credit for 102.01, 102.51, 102.66, 103.01, or 103.51. Repeatable to a maximum of 5 cr hrs. Students must register for and complete 5 cr hrs during the qtr. Students may register for 103.66 for 1-5 cr hrs. Progress is sequential, for each hour, with a proficiency of 80% required to move to the next credit hour.

**104 Intermediate French II**

Prereq: 103.01 or 103.66 or 5 cr hrs of 103.51 or 112. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Only one of the decimal subdivisions may be taken for credit. GEC for lang courses.

**104.01 Conversation and Composition U 5**

Continued development of listening, speaking, reading, and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary.

Su, Au, Wi, Sp Qtrs. Students not planning to continue in French may substitute any one of the following decimal subdivisions for 104.01. Course conducted in French. This course is available for EM credit.

**104.02 Conversation U 5**

Emphasis on speaking and aural comprehension with special attention to practical situations.

**104.03 Contemporary French Society U 5**

Emphasis on various aspects of contemporary French cultures; readings and discussion in French.

Su, Au, Wi, Sp Qtrs.

**104.04 Civilization U 5**

Aspects of French civilization: geography, history, social developments, and the arts; readings and discussion in French.

Au, Wi, Sp Qtrs.

**104.51 Conversion and Composition U 1-5**

Continued development of listening, speaking, reading, and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary.

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 103.01, 103.66, or 5 cr hrs in 103.51, or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Proficiency at the level of 80% is required for advancement from 1 cr hr to the next.

**112 Intensive French U 5,10,15**

Elementary and intermediate French; intensive drill in form, syntax, vocabulary, and idiom; reading of short stories, novels, and plays.

Su Qtr. 15 cl. Prereq: Permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Enrollment limited to 20 students. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, and 103. Students may not register for any other course if they enroll in 112. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in French will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. No audit. GEC for lang course. FL Admis Cond course.

**150 French Literature in Translation: Literature and French Identity from Renaissance Princes to Capitalist Entrepreneurs U 5**

Examination of key humanist and enlightenment works of literature (Rabelais, Montaigne, Lafayette, Voltaire) and challenges to them by science, society, ideologies (Descartes, Moliere, Rousseau, Balzac).

Not open to French majors. Taught in English. GEC arts and hums lit course.

**151 Masterpieces of French Literature in Translation U 5**

Introduction to the French novel, drama, and poetry by major modern writers. Not open to students with credit for 273. Taught in English. GEC arts and hums lit course.

**152 Introduction to Francophone African and Caribbean Literatures in Translation U 5**

Introduces students to the literatures and cultures of important non-Western regions of the Francophone world and develops their analytical reading and writing skills.

Taught in English. GEC arts and hums lit course.

**201 Introduction to Reading of Literary and Cultural Texts**

Designed to stimulate oral and written expression through the use of literary and cultural readings, to develop the ability to read critically, and to build analytical vocabulary.

Prereq: 104.01 or 5 cr hrs of 104.51 or permission of instructor. Not open to students with credit for 105 or 206.

**201.01 Classroom Track U 5**

H201.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Course conducted in French.

**201.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Proficiency at the level of 80% is required for advancement from 1 cr hr to the next.

**206^ Introduction to Business French U 5**

A preparatory course to the study of business French, focusing on the development of language skills within a business context.

Prereq: 104. Credit does not count toward the minimum number of hrs required for the French major. Intended for students pursuing the business French sequence (206, 406, and 706). Conducted in French.

**293 Individual Studies U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**294 Group Studies U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

**401 French Grammar Review U 5**

Oral and written review of French grammar.

Prereq: 105 or 201.

**402 Intermediate French Conversation U 3**

Practice in speaking French, building of practical vocabulary; emphasis on comprehension and oral expression.

Prereq: 105 or 201. Not open to native speakers of this language through regular course enrollment or EM credit.

**403 Intermediate French Composition U 3**

Basic kinds of French prose and techniques of composition; practice in writing letters, essays; descriptive, narrative, and personal compositions.

Prereq: 401. Not open to native speakers of this language through regular course enrollment or EM credit.

**404 French Pronunciation U 5**

Formation of French sounds, rules of pronunciation and diction; lectures and practical exercises; use of phonetic symbols.

Prereq: 105 or 201.

**406 Business French I U 5**

An introduction to business French with emphasis on basic business terminology, commercial correspondence, similarities and differences in business transactions, and international procedures.

Prereq: 206 or any 400-level course or permission of instructor.

**418 Teaching Language and French Culture: A Multimedia Approach U 5**

Exploration of an aspect of French culture through the use of varied multimedia tools (e.g., CD-ROMs, music, film, internet) and strengthening of oral and written language skills; topics vary.

Prereq: 201 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**425 French Literature and Society U 5**

Readings and analysis of the relationship between literature and society represented in different genres and periods of French Literature.

H425 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 201; 401 recommended.

**426 French Literature and the Self U 5**

Readings and analysis of various concepts of the self as represented in different genres and periods of French literature.

H426 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 201; 401 recommended.

**427 Francophone Literature: from Empire to Nation U 5**

Readings and analysis of French-language literary texts as these relate to issues of empire, nation, and identity.

H427 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 201; 401 recommended. Not open to students with credit for 424.

**440 Introduction to the Study of Contemporary French Culture U 5**

Introduction to ways of studying major aspects of French culture by means of lectures, readings, research projects, in-class presentations, and research reports.

Prereq: 201. Conducted in French.

**498 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**498.01 Domestic U 1-15**

Repeatable.

**498.02 Foreign U 1-15**

Repeatable.

**571 Basic French for Graduate Students G 5**

Designed primarily for students who have no formal preparation in French; covers basic grammar and vocabulary.

Prereq: Grad standing. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. No audit.

**572 French for Research I G 3**

Prereq: Grade of C or above in 571, or equiv preparation demonstrated by a placement test. Repeatable to a maximum of 6 cr hrs. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. No audit. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement.

**573 French for Research II G 3**

Prereq: Grade of A or B in 572, or equiv preparation demonstrated by a placement test. Repeatable to a maximum of 6 cr hrs. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. No audit. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement.

**601 Advanced French Grammar U G 5**

Systematic review of French grammar with composition and other exercises based on contemporary authors; modern tendencies in syntactic analysis.

Prereq: 401 and another 400-level language or literature course other than 404.

**602 French Translating U G 5**

An introduction to the theory of translation and practice of translation (French to English and English to French) based on texts reflecting different types of written communication.

Prereq: 601 or equiv.

**603 Advanced Spoken and Written French U G 3**

Intensive practice in speaking and writing French; based on contemporary usage.

Prereq: 402, 403, and 601 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit.

**604^ Advanced French Pronunciation and Phonostylistics U G 3**

Training in auditory and oral aspects of French pronunciation; special emphasis on analysis of different types of spoken French.

Prereq: 404 or permission of instructor.

**631 French Literature U G 2-5**

Topic varies.

Prereq: Three of the following: 421, 422, 423, or 424; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**643 From Absolute Monarchy to WWII U G 5**

Political and cultural history of France from Absolute Monarchy to World War II.

Prereq: 401 and 440, or permission of instructor. Not open to students with credit for 641.

**644 French Civilization since WWII U G 5**

The transformation of French society since WWII as a result of changing social and political structures.

Prereq: 401 and 440, or permission of instructor.

**651^ French Literature of the Renaissance U G 5**

Selections from Marot, Rabelais, the Pleiade and Montaigne; the age of humanism and the transition from medieval to modern forms and ideas.

Prereq: 10 cr hrs of literature courses; or permission of instructor.

**652^ French Literature of the 17th Century U G 5**

The formation of the classic spirit; the perfection of dramatic form and the 17th-century portrait of human life.

Prereq: 10 cr hrs of literature courses; or permission of instructor.

**653^ French Literature of the Enlightenment U G 5**

The ideas of the 18th century in their relation to modern times; emphasis on Montesquieu, Voltaire, Diderot, and Rousseau.

Prereq: 10 cr hrs of literature courses; or permission of instructor.

**654 French Literature from Romanticism to Realism U G 5**

Major currents in French literature from 1800 to 1870.

Prereq: 10 cr hrs of literature courses.

**655^ French Literature from Naturalism to World War I U G 5**

French literature from 1870 to 1914: the naturalist and symbolist schools; the various literary current of the early 20th century.

Prereq: 10 cr hrs of literature courses.

**656^ French Literature between the Two Wars U G 5**

Major literary currents and authors from 1914 to 1940.

Prereq: 10 cr hrs of literature courses.

**657 Literature of the Francophone World**

Prereq: 10 cr hrs of literature courses; or permission of instructor.

**657.01^ Francophone Literature from Black Africa and the Caribbean U G 5**

Major intellectual and literary currents in black Africa and the Caribbean.

**657.02^ Literature from North Africa U G 5**

Major intellectual and literary currents in francophone North Africa.

**657.03^ Quebec Literature U G 5**

Major intellectual and literary currents in Quebec.

**658^ Literature in France since 1940 U G 5**

Major literary currents and authors in France from 1940 to the present.

Prereq: 10 cr hrs of literature courses.

**663^ Women in French Literature U G 5**

Examination of representations of women in selected works of French literature from the 17th to the 20th centuries.

Prereq: 10 hrs of literature courses or permission of instructor.

**671^ French Cinema to 1945 U G 5**

The history and esthetics of French cinema from its beginnings to 1945.

Prereq: 10 cr hrs in literature and/or cinema above 200 level or permission of instructor. Taught in English.

**672 French Cinema, 1945 to Present U G 5**

The history and esthetics of French cinema from 1945 to the present.

Prereq: 10 cr hrs in literature and/or cinema above 200 level or permission of instructor. Taught in English.

**690 Business French Internship U 1-15**

Supervised training in international (French-speaking) business coordinated by student's advisor and internship training director.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 406 or permission of instructor. Repeatable to a maximum of 15 cr hrs. Notify Undergraduate Studies Chair no later than six months (2 quarters) before the start of the internship. This course is graded S/U.

**693 Individual Studies U G 1-15**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701^ Advanced French Language Usage U G 5**

Advanced study of present-day French language, with emphasis on more complex and finer morphological, syntactic, semantic, and stylistic distinctions, as well as on idiomatic expression.

Prereq: 601.

**702 Advanced Translation and Comparative Stylistics U G 5**

Theory of translation and a comparative study, through specific exercises and intensive translation, of the stylistic resources of French and English.

Prereq: 602 or permission of instructor.

**706 France: Geographical Setting and Socio-economic Structures U G 5**

A study of the French geographic, economic, and social environment as it relates to business; parallel emphasis on advanced language skills.

Prereq: 406 or permission of instructor. Taught in French.

**710 Contrastive Structures of French and English U G 5**

Comparison of the linguistic structures (phonology, morphology, syntax, and semantics) of French and English with special emphasis on the problems of English-speaking students.

Prereq: 601 or permission of instructor.

**712^ French Phonology and Morphophonemics U G 5**

The organization of the French sound system, its evolutionary tendencies, and its role in the articulation of the morphemes of the language.

Prereq: 601 or permission of instructor.

**714^ Aspects of Morphology, Syntax, and Semantics of French U G 5**

Selected aspects of the morphological, syntactic, and lexical organization of modern French and the role of these subsystems in the communication of meaning.

Prereq: 712 or permission of instructor. Not open to students with credit for 818.

**716 Survey of Medieval French Literature****716.01^ Introduction to Medieval French U G 5**

Introduction to medieval French grammar and vocabulary, using a medieval text as vehicle.

Prereq: 601 or permission of instructor. Not open to students with credit for 811.

**716.02^ Introduction to Medieval Occitan U G 5**

Introduction to the language and literature of medieval Occitan, especially to that of the troubadours.

Prereq: 716.01 or permission of instructor.

**721 Survey of Medieval French Literature U G 5**

Survey of French literature of the Middle Ages from its inception to Villon, with emphasis on different literary genres (epics, narrative fiction, poetry, theatre).

Prereq: Three of the following: 421, 422, 423, or permission of instructor.

**741^ Topics in French Culture and Civilization U G 5**

Analysis of French culture through the study of selected topics in literatures, film, and social thought; topic varies.

Prereq: 640 or 641 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**751^ Studies in Genre and Mode U G 5**

Intensive study of the history and/or aesthetics of a specific literary genre or mode such as theatre, poetry, irony, humor.

Prereq: One 600 level course and permission of instructor for undergraduates. Repeatable to a maximum of 10 cr hrs.

**H783 Honors Research U 3-5**

Offers undergraduates with special aptitudes a greater opportunity to do independent study than is possible in the ordinary course; work in conference, library, or phonetics laboratory.

Prereq: 4th yr standing with a grade of A in at least half of the French courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Sp Qtr. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

**801 Teaching French at the College Level G 5**

Methods and techniques for teaching French language at the college level. Au Qtr. Two wks intensive workshop previous to qtr followed by a 2-hr wkly cl. Prereq: Teaching associate in the Dept of French and Italian or permission of instructor. Not open to students with credit for Ed-T&L 801.01 or Ed-T&P 801.01. For students enrolled in this course, the minimum number of credit hours required for graduation is increased by 5 hrs. Cross-listed in Educational Teaching and Learning as 801.01.

**821^ Masterworks of Medieval French Literature G 5**

Intensive study of influential authors and anonymous masterpieces of French literature between 1100 and 1500.

**822^ Topics and Problems in Medieval French Literature G 5**

Intensive exploration of a special topic or problem, with readings in relevant criticism and scholarship.

Prereq: 821. Repeatable to a maximum of 15 cr hrs.

**823 Topics and Problems in 16th-Century French Literature G 5**

Intensive exploration of a special topic or problem, with readings in relevant criticism and scholarship.

Prereq: 651 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**824^ Topics and Problems in 17th-Century French Literature G 5**

Intensive exploration of a special topic or problem, with readings in literary works and in relevant criticism and scholarship.

Prereq: 652 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**825 Topics and Problems in 18th-Century French Literature G 5**

Intensive exploration of a special topic or problem, with readings in literary works and in relevant criticism and scholarship.

Prereq: 653 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**826 Topics and Problems in 19th-Century French Literature G 5**

Intensive exploration of special topics or problems with readings in literary works in relevant criticism and scholarship.

Prereq: 654, 655, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**827 Topics and Problems in 20th-Century French Literature G 5**

Intensive study of a specific topic or problem with readings of selected literary and critical works.

Prereq: 656 or equiv. Repeatable to a maximum of 15 cr hrs.

**828^ Topics in Francophone Literature G 5-15**

In-depth study of a theme, genre, movement, or author from a non-European area of the francophone world.

Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

**831 Seminar in French Literature G 2-5**

Su, Au Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**833 Seminar in French Literature G 3-5**

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**850 Seminar in French Linguistics G 5**

Detailed exploration of selected topics in French linguistics with extensive analysis of French language data relevant to the topic.

Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**870^ Seminar in French Cinema G 3-5**

Detailed exploration of particular topics or periods in French cinema with extensive analysis of individual films and readings in relevant theory and criticism.

Prereq: 671 or 672 or permission of instructor. Repeatable to a maximum of 15 cr hrs. PhD candidates may repeat to a maximum of 15 cr hrs.

**883 Introduction to Graduate Study in French G 5**

Basic tools for literary research and history and major areas of literary criticism.

Not open to students with credit for 886. Repeatable to a maximum of 30 cr hrs.

**885^\* Introduction to Contemporary Critical Theory G 5**

Selected readings covering the range of critical approaches to literature.

**887 Problems of Textual Analysis G 5**

Intensive work in literary and linguistic analysis of texts from various periods and genres.

Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in 884.

**890 Interdepartmental Studies in Critical Theory G 5**

Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.

Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in Comparative Studies in the Humanities, English, German, Spanish, and Women's Studies.

**893 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-15**

Investigation of minor problems in the various fields of French literature and language.

Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs. Permission from dept required to repeat.

**990 International (French-Speaking) Business Internship G 5**

Supervised training in international (French-speaking) business, coordinated by student's adviser and internship training director.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 706 or equiv, and permission of adviser and internship director. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**999 Research in French Language or Literature G 1-18**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Geodetic Science

470 Hitchcock Hall, 2070 Neil Avenue, 292-2771

General Prerequisites for all 600-Level Courses

Prerequisites for all 600-level courses are Math 153 and Physics 131.

**294 Group Studies U 2-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**400 Introduction to Geomatics**

An introduction to geomatics, with an emphasis on basic data collection using ground-based measurement techniques and basic photogrammetry.

Prereq: Math 153, Physics 131, En Graph 166; or permission of instructor. Not open to students with credit for Survey 203, 506, Civil En 402. Needs both Geod Sci 400.01 and 400.02 to complete.

**400.01 Introduction to Surveying U 2**

An introduction to geomatics, with an emphasis on basic data collection using ground-based measurement techniques.

Au Qtr. 3 cl, 1 3-hr lab for 5 weeks. Course runs first half of quarter, for 5 weeks.

**400.02 Introduction to Photogrammetry U 2**

An introduction to geomatics, with an emphasis on basic data collection using analog photogrammetry measurement techniques.

Au Qtr. 3 cl, 1 3-hr lab for 5 weeks. Course completed second 5 weeks of quarter.

**401 Surveying Techniques U 1**

An introduction to practical field techniques in surveying, with an emphasis on measurement and data collection.

Au Qtr. 1 3-hr lab. Prereq: 400, En Graph 166, Math 153, Physics 131; or permission of instructor. Not open to students with credit for Survey 203, 407 or Civil En 402.

**410 Spatial Data Analysis U 4**

Measurement theory, analysis of measurements, computation and adjustment of spatial data, in a computer-oriented geomatics environment.

Wi Qtr. 4 cl. H410 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 400, 470, En Graph 167, (H410 En Graph 167C), Math 254, Physics 132; or permission of instructor. Not open to students with credit for Survey 301. H410 not open if 410 completed. All classes to be run in Region 1 computer lab.

**450 Spatial Data Adjustment I U 4**

An introduction to adjustment theory in geomatics, propagation of variances and covariances; least squares adjustment in geomatics; analysis of adjustment results; hypothesis testing.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 410, Cptr/Inf 230, Math 568, Stat 428; or permission of instructor. Not open to students with credit for 650 or Survey 450.

**470 Professional Development 1A U 1**

An introduction to structured thinking, focusing on breadth of thinking skills and organization of thinking, with an emphasis on open-ended problem-solving skills.

Au Qtr. 1 2-hr lab.

**471 Professional Development 1B U 1**

Continuation and development of 470, with a focus on interaction and creativity in thinking and problem solving.

Wi Qtr. 1 2-hr lab. Prereq: 470.

**472 Professional Development 1C U 1**

Continuation and development of 470 and 471, with a focus on information and emotional issues in the thinking process.

Sp Qtr. 1 2-hr lab. Prereq: 470.

**494 Group Studies U 1-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**501 Surveying CAD Applications U G 3**

Practical application of CAD to surveying and mapping problems; 3-D applications and problem solving; linking to attribute databases; mapping and platting standards.

Wi Qtr. 1 cl, 2 2-hr labs. Prereq: 410 or En Graph 166; or permission of instructor. Not open to students with credit for 694C.

**502 Engineering Surveying U G 4**

Surveying applications for engineering, construction, mining and transportation work. Route surveying and geometric design; topographic site surveys and mapping; earthwork computations.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 410; or permission of instructor. Not open to students with credit for Survey 407 or 511.

**520 Satellite Applications I U G 3**

Fundamentals of space geodesy and the application of its theory and techniques to other geomatics disciplines. Earth and planetary satellite-based measurement and remote sensing techniques.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 410, Math 152, Physics 131; or permission of instructor.

**521 Geodetic Measurement U G 4**

Fundamentals of geodetic measurements; astronomical observations; geodetic control surveying; 3-D measurement systems.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 450; or permission of instructor. Not open to students with credit for Survey 509 or 511.

**540 Senior Project I U 1**

First part of a project to be taken by students in their final year in the program, running from Autumn to Spring quarters.

Au Qtr. Arr. Prereq: 450; students must be in their final year. This is a Progress course. Credit will be awarded upon completion of 542. Geod Sci H783 may be available for students in the Honors program.

**541 Senior Project II U 1**

Second part of a project to be taken by students in their final year in the program, running from Autumn to Spring quarters.

Wi Qtr. Arr. Prereq: 450 and 540; students must be in their final year. This is a Progress course. Credit will be awarded upon completion of 542. Geod Sci H783 may be available for students in the Honors program.

**542 Senior Project III U 2**

Third part of a project to be taken by students in their final year in the program, running from Autumn to Spring quarters.

Sp Qtr. Arr. Prereq: 450 and 541; students must be in their final year. This is a Progress course. This is the final course in the "Progress" graded sequence 540-541-542. Geod Sci H783 may be available for students in the Honors program.

**550 Spatial Data Adjustment II U G 3**

Continuation of 450: phased adjustment; 3-D adjustment; adjustment applications in photogrammetry and high-precision metrology; network design and analysis; error analysis.

Sp Qtr. 3 cl. Prereq: 450; or permission of instructor. Not open to students with credit for 650 and 651. Geod Sci H551 may be available for students in the Honors program.

**H551 Honors Spatial Data Adjustment II U 3**

Continuation of 450: phased adjustment; 3-D adjustment; adjustment applications in photogrammetry and high-precision metrology; network design and analysis; error analysis.

Sp Qtr. 3 cl. Prereq: 450; enrollment in Honors program. Not open to students with credit for 550, 650, 651. At least one class to be held in Region 1 computer lab.

**560 History of Surveying U G 3**

History of earth measurement and methods; historical connections with other sciences; history of land survey systems in the US; milestones in technology.

Au Qtr. 3 cl. Not open to students with credit for Survey 403.

**561 Boundary Surveying U G 4**

Land surveyor's role; analysis of evidence and procedures for boundary location; retracement principles for sequence; simultaneous and public land surveys; laws on surveying practices.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 400, 401, 560, Bus-Fin 775; or permission of instructor. Not open to students with credit for Survey 524.

**562 Subdivision Design U G 3**

Process of subdividing and platting land; analysis of soils, topography, terrain, earthwork, geometry and other variables for land subdivision; plat preparation; layout of development plans.

Sp Qtr. 3 cl. Prereq: 501, 502, 561, Civil En 510 (or equiv); or permission of instructor. Not open to students with credit for Survey 507.

**563 Land Information Management U G 4**

Land information as a resource in an information society, land information systems (LIS), and issues related to the implementation and development of LIS.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Math 153, Physics 131. Not open to students with credit for 626.

**572 Professionalism and Ethics U 1**

Study of professionalism and ethical requirements for Geomatics Engineers by case studies and literature reviews.

Au Qtr. 2-hr lab. Prereq: 410.

**573 Professional Development II U G 1**

An introduction to presentation skills: verbal, written, visual, audio-visual and electronic. Use of presentation support equipment and software and the art of presentation.

Wi Qtr. 1 2-hr lab. Prereq: Recommended: 472.

**574 Professional Development 3 U G 1**

An introduction to professional organizational skills, with an emphasis on understanding how modern businesses and organizations involved in geomatics operate.

Sp Qtr. 1 2-hr lab. Prereq: Recommended: 573.

**575 Professional Practice U G 2**

Application of geomatics from the points of view of the practitioner and the consumer of land-related data. Professional responsibility and ethics.

Sp Qtr. 1 2-hr cl. Prereq: Recommended: 410 and 574. Not open to students with credit for Survey 510.

**576 Geomatics Camp U 0**

A field course that allows students to undertake practical work in real-world conditions.

Au Qtr. 1 week camp. Prereq: 450. This course is graded S/U.

**577 Work Experience U 0**

This course is used for the formal recording of satisfactory completion of the required 10 weeks of approved work experience.

Su, Au, Wi, Sp Qtrs. Arr. This course is graded S/U.

**578 Geomatics Eschatology U 0**

A final interactive assessment of the student's overall achievements in Geomatics Engineering, their assessment of the program and final career advising session.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Student must be in their final quarter of the Geomatics Engineering program. This course is graded S/U.

**H595 Honors Seminar U 1-2**

Study of selected problems in Geomatics Engineering, for Honors students.

Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in Geomatics Engineering Honors Program. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

**597^ Mapping the World U 5**

Scientific and technological bases of modern mapping science and its contribution to contemporary world issues.

Au Qtr. 4 cl. 1-3-hr lab. Prereq: Sr standing. GEC/LAR course.

**601 Introduction to Mapping and Photogrammetry U G 5**

Introduction to mapping and photogrammetry; modern methods and instrumentation; basic analytical procedures.

Au Qtr. 4 cl. 1-3-hr lab Prereq: Math 153 and Physics 131.

**603 Remote Sensing of Environment U G 4**

The energies of the natural and cultural environment, current remote sensing systems, and case histories of applications in measuring the environment.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: Civil En 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Civil En 603. Cross-listed in Civil Engineering.

**604 Terrain Analysis U G 4**

Principles and applications of photo pattern analysis, geologic and geomorphologic patterns, terrain studies, and land use suitability and capability mapping.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Civil En 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Civil En 604. Cross-listed in Civil Engineering.

**607 Fundamentals of Geographic Information Systems U G 4**

Basic principles of geographic and land information systems and their use in spatial analysis and information management.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: Sr standing. Not open to students with credit for Geog 685; or 607 in C&R Plan, Civil En, Geog, Geol Sci, or Nat Res. Cross-listed in City and Regional Planning, Civil Engineering, Geography, Geological Sciences, and Natural Resources.

**608 Introduction to GPS: Theory and Applications U G 3**

Introduction to reference systems; types of GPS observable; principles of GPS operations; GPS error analysis; field procedures; data collection, processing and GPS applications. 2 cl, 1 3-hr lab.

Au Qtr. Prereq: Math 156, Physics 131 or permission of instructor. Not open to students with credit for 609.

**609 Surveying with Satellites U G 3**

Surveying with Earth artificial satellites, global positioning system, relative positioning using interferometric techniques, kinematic surveying.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 450 or 650; and 521 or 601. Not open to students with credit for Survey 609.

**612 Topics in Geodesy U G 4**

Geometry of the ellipsoid; geodetic coordinates computations for short and medium lines; geodetic datums; Earth's gravity field; artificial geodetic Earth satellites; and figure of the Earth.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 601 or Survey 511 or written permission of instructor. Not open to students with credit for Survey 612 or for grad credit to students with credit for 658, 776 or 777, or Survey 612.

**623 Topics in Photogrammetry U G 4**

Techniques, equipment for mapping and point determination; concept, methods, results of block adjustment; image based maps; computer-assisted and controlled-data processing; terrestrial and space photogrammetry.

Sp Qtr. 3 cl. Prereq: 601 and 650; or permission of instructor. Not open to students with credit for 628, 725, 726, 727, or 728.

**624 Advanced Topics in Photogrammetry U G 4**

Photogrammetric aerotriangulation; analytical point positioning, applications in terrestrial photogrammetry and camera calibration; data capture for digital elevation models; orthophotography.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 450 or 650; and 623; or permission of instructor. Not open to students with credit for Survey 515.

**625 Cadastral Information Systems U G 4**

Land tenure, evolution of the cadastre and its relation to land rights; principles and applications.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 630; or permission of instructor. Not open to students with credit for Survey 625.

**628 Analytical Photogrammetry I U G 4**

Analytical photogrammetry and mathematical models; measurement and reduction of image coordinates; bundle adjustment; analytical camera calibration; aerotriangulation; analytical plotters.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 650 or permission of instructor. Not open to students with credit for 623.

**629 Digital Photogrammetry I U G 4**

Introduction to digital photogrammetry; digital image processing for photogrammetry; computer vision; human visual system; data acquisition, hardware and software.

Sp Qtr. 3 cl. Prereq: 450 or 601; or permission of instructor. Not open to students with credit for 728.

**630 Fundamentals of Computer-Assisted Cartography U G 4**

Basic principles of cartographic methods as applied to computer-assisted topographic mapping systems and their use in land information management.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Grad standing in geod sci or written permission of instructor.

**632 Large Scale and Topographic Mapping U G 4**

The concepts, theories, and principles of large scale mapping with emphasis on design, production, and use of digital topographic maps.

Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 630 or permission of instructor.

**633^ Digital Surface Models U G 4**

Principles of digital surface modeling and their applications with the aid of computer-based techniques. Sp Qtr. 3 cl, 1 3-hr lab.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 630 and 632, or permission of instructor; and 650; or prereq or concur Geog 883.02. Not open to students with credit for 631.

**634 Digital Mapping Systems U G 4**

Survey and evaluation of digital mapping systems with respect to components, accuracy, and efficiency.

Sp Qtr. 1 cl, 3 3-hr labs. Prereq: 633 or permission of instructor.

**636 Map Projections U G 4**

The principal map projections of the sphere; their distortions, properties, and usage.

Wi Qtr. 3 cl, 1 3-hr lab.

**637 Topics in Mapping U G 4**

A survey of cartographic fundamentals in the context of contemporary developments.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 630 or equiv. Not open for grad credit to students with credit for 632, 633, or 732.

**638^ Topics in Land Information Management U G 3**

Overview of topics in geographic and land information systems (GIS/LIS) and land information management (LIM).

Sp Qtr. 3 cl. Prereq or concur: 630 or written permission of instructor. Not open to students with credit for 626 or Survey 625.

**640 Decision-Making with GIS U G 3**

Examination of decision-making processes; examination of GIS functionality to assist decision-making processes; practical examples and case studies.

Su Qtr. 2 1-hr cl, 1 3-hr lab. Prereq: 630 or 607; or 607 in C&R Plan, Civil En, Geog, or Nat Res; or permission of instructor. Not open to students with credit for 694D. Practical aspects of using GIS in a decision-making environment. Emphasis is on working in a multi-disciplinary team-based environment, using GIS as a support and analysis tool.

**650 Adjustment Computations I U G 5**

Classification of errors; measures of dispersion; variance and covariance; propagation of errors, weights, observation and normal equations, algorithms, and examples; statistical tests; error ellipses.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: Math 153 or equiv.

**651 Adjustment Computations II U G 4**

A posteriori variances; representation of residuals; condition equations with and without parameters; stochastic or weighted constraints; datum parameters; prior information; special test statistics; algorithms and examples.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 650 or equiv.

**658 Geometric Geodesy U G 4**

Historical development; geometry of the reference ellipsoid; reductions/use of ellipsoid as a reference surface; major geodetic control; introduction to advanced geometric geodesy; principal conformal projections.

Wi Qtr. 4 cl. Prereq: Survey 511 or equiv.

**660 Geometric Reference Systems U G 5**

Geodetic and astronomic coordinates, ellipsoidal geometry, geodetic datums, terrestrial and celestial reference systems, reduction of celestial coordinates, polar motion, time systems.

Wi Qtr. 4 1-hr cl, 1 3-hr lab. Prereq: 650 or equiv.

**664 Geodetic Astronomy U G 4**

Stellar coordinate systems; stellar positions and motions; time; star catalogues; principles of position determination.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 650 or equiv.

**693 Individual Studies U G 2-9**

Assigned reading laboratory or field work, under the guidance of a staff member, arranged to meet the requirements of individual students.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-9**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs.

**697 Study at a Foreign Institution U 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**725 Analytical Photogrammetry II U G 4**

GPS controlled aerotriangulation; quality control and network design; on-line triangulation. DEMs and orthophotography. Mapping from space. Multi-media photogrammetry.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 628 or permission of instructor. Not open to students with credit for 622 and 724.



**728 Digital Photogrammetry II U G 4**

Fundamental processes and major applications of digital photogrammetry. Advanced DEM and orthophoto methods. Computer vision applications in digital photogrammetry.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 628, 629, 650. Not open to students with credit for 829, 830, or 831.

**732 Generalization of Topographic Maps U G 4**

Principles and advanced applications of the generalization of topographic maps.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 633 and 651; or written permission of instructor.

**745\* Inertial Navigation/Positioning Analysis U G 5**

Coordinate frames; inertial measurement units—mechanizations, system error dynamics; linear estimation theory with application to initialization and calibration; system integration with GPS; geodetic applications.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: 651, Geod Sci 609; or equiv and permission of instructor. Course covers the operation and performance of inertial navigation systems, the theory of linear estimation, including the Kalman filter, as applied to INS and its integration with the Global Positioning System, and specific problems in geodetic science appropriate for and/or benefitting from INS implementation.

**760\* Advanced Geometric Geodesy U G 5**

Solution of long line problems on the ellipsoid; datum transformations; determination of the size and shape of the reference ellipsoid; fundamentals of three-dimensional geodesy.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq or concur: 658, 776, and 777.

**762 Advanced Adjustment Computations U G 4**

Large patterned systems, Gauss-Markoff model and mixed models; techniques of collocation and its robustification; generalized matrices in geodetic science; estimable and projected parameters; error ellipsoids.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 651 or equiv.

**765 Analysis and Design of Geodetic Networks G 3**

Geodetic network definition; invariant quantities; geodetic datum; measures of accuracy and reliability; model tests; outlier detection; network design; optimality criteria; introduction to geodetic deformation analyses.

Sp Qtr. 3 cl. Prereq: 651 or equiv.

**774\* Spectral Methods and Raster Geometry in Digital Mapping G 4**

Spectral analysis techniques and raster geometry as applied in digital photogrammetry and digital cartography; pattern recognition theories.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: Geol Sci 642.

**776 Gravimetric Geodesy U G 5**

The gravity and its potential; the disturbing potential and its representation; applications and current methods.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: 651 and 658; or equivs.

**777 Satellite Geodesy U G 4**

Geometric and dynamic applications of artificial satellites in geodesy; determination of station positions and the gravity field of the Earth.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: 664 and 776; or equivs.

**781\* Topics in Geodynamics U G 3**

Theory of Earth rotation; determination of Earth orientation parameters; precession; nutation, polar motion and time, and radio interferometry of extragalactic radio sources; and Earth tides.

Wi Qtr. 3 cl. Prereq: 664.

**H783 Honors Research**

Supervised research and project work arranged individually for honors students. This course is used by Honors students instead of the 540-542 Senior Project sequence.

Arr. Prereq: 450; enrollment in Honors program. Not open to students with credit for 540, 541, 542. This course is completed by successfully completing all three decimal subdivisions in sequence.

**H783.01 Honors Research I U 1**

First part of Honors Research Project sequence.

Au Qtr. This is a Progress course. Credit will be awarded upon completion of H783.03.

**H783.02 Honors Research II U 1**

Second part of Honors Research Project sequence.

Wi Qtr. This is a Progress course. Credit will be awarded upon completion of H783.03.

**H783.03 Honors Research III U 2**

Third and final part of Honors Research Project sequence.

Sp Qtr. This is a Progress course. This is the final course in the 'Progress' graded sequence H783.01-H783.02-H783.03.

**786 Managing Spatial Data Structures for Computer Mapping G 4**

Introduction to spatial data structures for computer mapping; implementation of domain-specific data structures using Avenue scripting and C++.

Au, Sp Qtrs. 3 1-hr cl, 1 3-hr lab. Prereq: Cptr/Inf 222 or equiv; Geod Sci 634 or permission of instructor. The course will introduce spatial data structures and illustrate their management in an object-oriented programming environment. Labs will implement domain-specific computer programming exercises using Avenue scripting and C++ programming languages.

**787 Advanced Spatial Database Systems G 4**

Spatial feature generation, 3-D spatial modeling; spatial relational operators and algebra, Peano relations and map data, normalization and confirmation; spatial indexing and consistency, distributed map databases; octree and subsurface modeling, animation for GIS.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 630, 634 and Cptr/Inf 670; for Geography grad students Geog 685 and Cptr/Inf 670; or permission of instructor.

**828\* Advanced Photogrammetric Applications G 4**

Design, application, and analysis of advanced analytical photogrammetric techniques to a variety of measurement tasks.

Wi Qtr. 2 cl, 2 3-hr labs. Prereq: 728 or permission of instructor.

**829\* Advanced Digital Image Acquisition in Photogrammetry G 3**

Methods and systems of acquiring digital imagery; theory and applications of error corrections; assessment of image quality.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 774.

**830\* Advanced Methods of Processing Digital Imagery in Photogrammetry G 3**

Utilization of advanced methods of image processing and computer vision techniques as it pertains to digital photogrammetry.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 829 or written permission of instructor.

**831\* Advanced Pattern Recognition and Interpretation Methods in Digital Mapping G 3**

Methods of pattern recognition, feature extraction, feature and object classification, as it pertains to digital photogrammetry and digital cartography.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 830.

**835\* Advanced Cartography G 4**

A review and examination of current research, development, and thinking in cartography with particular attention to mapping from space platforms.

Wi Qtr. 3 cl, 1 1-hr lab. Prereq: 732 or written permission of instructor.

**837 Computational Cartography G 4**

Computational techniques and computational complexity of various operations of digital mapping will be examined.

Sp Qtr. 3 1-hr lec, 1 3-hr computer lab. Prereq: 786 or Cptr/Inf 680 or permission of instructor.

**862 Adjustment Computations for Random Processes G 3**

Random Effects Model, optimal and robust prediction, weak hypothesis testing, spatial processes, covariance function, variogram, homeogram, Kriging and alternative interpolators, quality measures.

Sp Qtr. 3 cl. Prereq: 650 or equiv.

**871\* Advanced Gravimetric Geodesy G 4**

Boundary-value problem; use of spherical harmonics; statistical application; appropriate representations; computations in space; combination of gravimetric and satellite data.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 762 and 777; or equivs.

**873\* Advanced Satellite Geodesy G 4**

Dynamics of earth orbiting satellites; equations of motion and their solutions; advanced data acquisition method; analysis for the gravity field and station positions.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 762 and 777; or equivs.

**875\* Spectral Methods in Gravimetric Geodesy G 3**

Spectral analysis theory and techniques in gravimetric geodesy.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 871.

**885 Research Principles and Techniques G 2-9**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

**887 Seminar G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**894 Group Studies G 2-9**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**899 Interdepartmental Seminar G 1-5**

Topics to be announced each quarter offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**998 Research in Geodetic Science: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

**999 Research in Geodetic Science: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Geography

1036 Derby Hall, 154 North Oval Mall, 292-2514

Antarctic Marine Ecology and Policy  
See EEOB/Int Stds/Nat Res 597.02.

Atmospheric Sciences Seminar  
See Atmos Sc 881.

**120 Earth Systems II: Atmospheric Environment U 5**

Introduction to the characteristics and processes of the Earth's atmosphere and their linkage with other physical systems of the planet and with human activity.

2 1 1/3-hr lec, 1 1/3 rec. H120 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 120: Geol Sci 100. Prereq for H120: Geol Sci 100 or permission of instructor. Not open to students with credit for 220. GEC phys sci course.

**200 World Regional Geography U 5**

An examination of the human and physical geographic structure of all world regions; defined primarily at the continental scale and classified by their level of development.

Su, Au, Wi, Sp Qtrs. 3 1 1/3-hr cl. H200 (honors) may be available Au Qtr to students enrolled in an honors program or those approved by the UVC or ASC Honors offices. GEC soc sci human, natural, and economic resources course. SS Admis Cond course.

**210 Physical Geography and Environmental Issues U 5**

Introductory physical geography from an environmental perspective, including the interaction of physical and social factors in the causes of and strategies for ameliorating environmental problems.

Su, Au, Wi, Sp Qtrs. 2 1 1/3-hr lec., 1 1 1/3-hr lab. Not open to students with credit for 120. GEC phys sci course.

**220 Introduction to Physical Geography U 5**

The elements and processes of the natural environment, their characteristics, distribution, and implications in the human habitat.

Su, Au, Wi, Sp Qtrs. 5 cl. H220 (honors) may be available Sp Qtr to students enrolled in an honors program; others with permission of dept. NS Admis Cond course.

**240 Economic and Social Geography U 5**

Geographic analysis of selected economic and social issues at global, national, and metropolitan scales; locational, spatial interaction, and map analysis of population, urbanization, and development issues.

Su, Au, Wi, Sp Qtrs. 5 cl. H240 (honors) may be available Wi Qtr to students enrolled in an honors program or by permission of dept. GEC soc sci human, natural, and economic resources course. SS Admis Cond course.

**280 Map Reading and Interpretation U 5**

An introduction to reading topographic and thematic maps; map interpretation, analysis, and use.

Sp Qtr. 3 cl, 2 labs.

**294^ Group Studies U 3-5**

Students are given the opportunity to pursue special studies not otherwise offered.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 or hrs.

**400 Geography of United States and Canada U 5**

Geographical analysis of North America; spatial patterns and processes associated with resources, economic structure, population, urbanization, income, and ethnicity at national, regional, and urban scales.

Au, Wi Qtrs. 3 1.5-hr cl. H400 (honors) may be available to students enrolled in an honors program or by permission of instructor. GEC social diversity course.

**401 Geography of Ohio U 3**

An appraisal of geographic factors in the settlement and development of Ohio; an overview of the evolution of the Ohio economy.

Sp Qtr. 3 cl. Prereq: Either 200, 220, or 240, or equiv.

**460 Political Geography U 5**

The global economy, spatial integration, and uneven development; states, spatial fragmentation, and uneven development; and the politics of space of nations, regions, and localities.

Au Qtr. 2 2-hr cl. Not open to students with credit for 560. GEC soc sci organizations and politics course.

**505 Geography of Latin America**

Geographic analysis of Middle and South America emphasizing the interrelationships of the resource base, cultural characteristics, and outside influences upon economic development.

3 cl. Prereq: Either 200, 220, or 240, or equiv; or permission of instructor.

**505.01 Middle America U G 4**

Au Qtr.

**505.02 South America U G 4**

Wi Qtr.

**510 Geography of Western Europe U G 4**

Geographic factors in the economic, social, and political progress of the nations of Western Europe; major problems of the area in the light of their geographic background.

Sp Qtr. 3 cl. Prereq: Either 200, 220, 240, or equiv; or permission of instructor.

**511^ Geography of Eastern Europe U G 4**

Resources, their assessment, and development, and related problems in Eastern Europe; the geographic significance of each state to the Communist bloc and to the West.

Wi Qtr. 3 cl. Prereq: Either 200, 220, or 240, or equiv; or permission of instructor.

**512 Geography of the Soviet Union U G 4**

The major regional divisions of the Soviet Union; the resource base in relation to the economic and political aims of the Soviet state.

3 cl. Prereq: Either 200, 220, or 240, or equiv; or permission of instructor.

**520 Climatology U G 5**

The elements and the controls of climate; types of climate and their distribution; climates and their effects on the economic and other activities of humans.

Au, Wi Qtrs. 5 cl.

**580 Elements of Cartography U G 5**

A study of the cartographic techniques of map compilation and presentation including generalization, symbolization, reproduction, and simple computer mapping with an emphasis on thematic mapping.

Au, Sp Qtrs. 2 cl, 2 2-hr labs.

**597 Issues of the Contemporary World**

Prereq: Sr standing. GEC contemporary world courses.

**597.01 World Urbanization U 5**

An examination of geographic aspects of the urbanization process in the world's major regions; interrelationships between urbanization and economic development.

Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for 450 or 597.

**597.02 Integrated Earth Systems: Confronting Global Change U 5**

Introduction to numerous global change issues through the exploration of the integrated Earth system; problem-solving strategies within an interdisciplinary team environment.

Wi Qtr. 2 1.5-hr cl, 1 1.5-hr lab. Not open to students with credit for Geog 694 Sp Qtr 1993.

**605^ Special Problems in the Geography of Latin America U G 5**

The analysis of selected topical problems in Latin American geography; typical problem areas are urbanization, industrialization, transportation, agricultural development, and regional development.

Wi Qtr. 3 cl. Prereq: 505 or permission of instructor. Repeatable to a maximum of 10 or hrs.

**607 Fundamentals of Geographic Information Systems U G 4**

Basic principles of geographic and land information systems and their use in spatial analysis and information management.

Wi Qtr. 3 cl, lab arr. Prereq: Geog major or permission of instructor. Not open to students with credit for 685; or 607 in C&R Plan, Civil En, Geod Sci, Geol Sci, or Nat Res. Cross-listed in City and Regional Planning, Civil Engineering, Geodetic Science, Geological Sciences, and Natural Resources.

**608 South Africa: Society and Space U G 5**

The geography of apartheid; its social and historical conditions; the changing geography of apartheid and its politics; South African exceptionalism.

Wi Qtr. 2 2-hr cl.

**612 Special Problems in the Geography of the U.S.S.R. U G 5**

Spatial analysis of selected topical problems in Soviet geography.

Wi Qtr. 4 cl. Prereq: 512 or permission of instructor. Repeatable to a maximum of 10 or hrs.

**620 Synoptic Meteorology Laboratory U G 3**

Introduction to reading and interpretation of synoptic weather maps and diagrams- and data-communications systems.

Au Qtr. 2 cl, 1 lab hr. Prereq or concur: 520 or Atmos Sc 230. Not open to students with credit for Atmos Sc 620. Cross-listed in Atmospheric Sciences.

**622 Microclimatology****622.01 Boundary Layer Climatology U G 5**

Theory of exchanges of energy and mass at the Earth-atmosphere interface as it relates to microclimates with particular emphasis upon radiation and climate.

Wi Qtr. 5 cl. Prereq: 520 or Atmos Sc 230 or permission of instructor, and Physics 132.

**622.02^\* Microclimatological Measurements U G 5**

Practical experience in the fabrication of instruments, deployment of measurement systems in the field, and recording of data related to microclimates.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 622.01.

**623 Synoptic Meteorology**

The theory and practice of weather forecasting.

**623.01 Synoptic Analysis and Forecasting U G 5**

Theory and practice in synoptic weather analysis and forecasting.

Wi Qtr. 5 cl. Prereq: 520 or Atmos Sc 230 or Physics 503, and Atmos Sc 620 or Geog 620; and prereq or concur: Physics 132. Not open to students with credit for 623.

**623.02 Severe Storm Forecasting by Radar and Satellite U G 5**

The theory and application of radar and satellite imagery in weather forecasting; emphasis on severe thunderstorms, tornadoes, and hurricanes; analysis of their evolution and structure.

Sp Qtr. 2 2-hr cl. Prereq: 623 or 623.01.

**630 Conservation of Natural Resources U G 5**

Philosophy of resource use; appraisal of resource base; costs of resource development and conservation; resource perception, utilization, and alternatives.

Wi Qtr. 2 1.5-hr cl.

**640 Economic Geography U G 5**

A substantive and theoretical introduction to topics in economic geography.

Au Qtr. 2 2-hr cl.

**642 Geography of Development U G 5**

Spatial aspects of economic development; spatial analysis of traditional economics, industrial regions, transport linkages, and migration patterns in developing countries.

Sp Qtr. 3 cl.

**643 State, Society, and Development in the Global Economy U G 5**

Analysis of state-society relations and development from a geographic perspective.

Wi Qtr. 2 2-hr cl. Prereq: Soph or above standing, and permission of instructor; or grad standing. GEC soc sci organizations and politics course.

**645 Geography of Transportation U G 5**

Relation between transportation and spatial organization; selected analytical models dealing with traffic demand, network configuration, and allocation of transport facilities; application to selected problems.

Au, Wi Qtrs. 3 cl.

**647 Locational Analysis U G 5**

Historical review of major location theories and evaluation of application of such theories to geographic problems.

Wi Qtr. 3 cl.

**650 Urban Geography U G 5**

Origin and growth of cities; structure and function of urban centers, their areal expansion, and intertrade center relations, each examined in relation to city planning.

Au, Wi, Sp Qtrs. 3 cl.

**655 Theory and Methods of Regional Analysis U G 5**

Issues addressed focus on regional economic systems, and include regional definition and identification, measurement and classification, quantification in regional analysis, regional economic data and modeling.

Sp Qtr. 2 2-hr cl. Prereq: 240 or permission of instructor.

**660 Urban Political Geography U G 5**

The changing politics of space in cities: class, neighborhood, and workplace in the industrial and the post-industrial city.

Wi Qtr. 2 2-hr cl. Prereq: 460.

**670 Population Geography U G 5**

Analysis of population distributions, locational arrangements of growth, densities, and migration flows; spatial relationships between population variables and social, economic, and environmental factors.

Wi Qtr. 3 cl. Prereq: 240.

**680 Numerical Cartography U G 5**

An examination of the theory and methods of machine-oriented numerical cartography.

Wi Qtr. 2 2-hr cl. Prereq: 580 and Math 150; or equivs.

**682 Individual Studies in Cartography U G 3-5**

Individual study of cartographic subjects; map compilation, cartographic classification, regionalization, and multi-dimensional representation, computer mapping and real-time computer cartographics.

Au, Wi Qtrs. Conf and lab. Prereq: Permission of instructor. This course is graded S/U.

**683 Introduction to Geographic Analysis U G 5**

An introduction to data analysis in geography; fundamental methods used in quantitative geographic research.

Au Qtr. 2 2-hr cl.

**685 Intermediate Geographic Information Systems U G 5**

Designed to provide a background in GIS-based spatial analysis approaches and develop an understanding of the operational basis of modern GIS technology.

Au Qtr. 2 2-hr cl, 1 3-hr lab. Prereq: 607, or 607 in one of the following depts: C&R Plan, Civil En, Geod Sci, or Nat Res; or permission of instructor.

**686 GIS in Social Science and Business Research U G 5**

Application of GIS technology to the analysis of small area statistical data is illustrated through laboratory exploration of social science and business research problems.

Sp Qtr. 2 1.5-hr cl, 1 3-hr lab. Prereq: One course at the 300 level or above in human geography, marketing, or planning; prereq or concur: 685; or permission of instructor.

**687 Design and Implementation of Geographic Information U G 5**

Introduction to the design of geographic information systems (GIS), institutional context of geographic information systems; design; role of data base design; and evaluation of GIS.

Sp Qtr. 2 2-hr cl. Prereq: 685 or Nat Res 745 or permission of instructor.

**689 Student Intern Program in Geography U 3-10**

An opportunity for work experience and on-the-job learning in geography-related employment.

Su, Au, Wi, Sp Qtrs. Prereq: 20 hours of major program courses and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**693 Individual Studies U G 1-15**

Individual study of a special problem or of a particular region.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

**694 Group Studies U G 3-5**

Group study of special topics in various fields of geography.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**695 Undergraduate Seminar in Applied Geography U 5**

The practical application of theoretical geographical concepts to problems in the local area.

Sp Qtr. 2 2-hr cl. Prereq: 20 cr hrs in geog.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Student will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**740 Advanced Locational Analysis U G 5**

Advanced problems in location analysis, application of programming techniques and spatial equilibrium analysis.

Sp Qtr. 3 cl. Prereq: 647 or permission of instructor.

**780 Analytical Cartography U G 5**

An examination of the theory and methods of analytical cartography.

Sp Qtr. 2 2-hr cl, 2-hr lab. Prereq: 680, 795 or equiv, and Math 152 or equiv; or prereq or concur: Geod Sci 631.

**782 Interactive Cartographic Systems U G 5**

An examination of the theory and methods of developing, building, and implementing interactive cartographic systems.

Au Qtr. 2 2-hr cl. Prereq: 780.

**H783 Honors Research U 3-5**

A program of individual study arranged for students enrolled in the honors program with individual conferences and reports; requires presentation and oral defense of an honors thesis.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the geog courses taken and an average of at least B in the remainder; written permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degree BA with distinction in geog. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**785 Data Input Operations in GIS/Cartography U G 5**

Examination of instrumentation and methods by which digital spatial databases are created for subsequent use in cartography and geographic information systems.

Au Qtr. 2 2-hr cl. 1 2-hr lab. Prereq: 580, 685, and 687; or permission of instructor.

**787 Advanced Applications in Geographic Information Systems U G 5**

Examination of selected problems relating to the application of geographic information system technology to various topical areas; the topic varies each time course is offered, and topics may include climatology, urban geography, and biogeography.

Au Qtr. 2 3-hr cl. Prereq: 685 and 687, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**789 Survey Research Practicum G 5**

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

Sp Qtr. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in AED Econ, Agr Educ, Bus-Mktg, Econ, Edu P&L, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, Sociol, or Stat. Cross-listed in AED Econ, Agr Educ, Bus-Mktg, Econ, Edu P&L, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, Sociol, and Stat.

**795 Seminar in Geography U G 5**

Introduction to research procedures, problem formulation, and application of research techniques in geography.

Au, Wi, Sp Qtrs. 2 2-hr cl. Repeatable to a maximum of 20 cr hrs.

**800 Seminars in Regional Geography**

The development of theory in regional development and its application to selected problems.

**800.01 Theory of Regional Development G 3-5**

Wi Qtr. Repeatable to a maximum of 20 cr hrs.

**800.02 Problems in Regional Development G 3-5**

Sp Qtr. Repeatable to a maximum of 20 cr hrs.

**820 Seminars in Physical Geography****820.01 Problems in Climatology G 3-5**

Repeatable to a maximum of 20 cr hrs.

**820.03 Special Problems G 3-5**

Repeatable to a maximum of 20 cr hrs.

**821 Dynamic Climatology G 5**

Dynamics, thermodynamics, energy conservation, flows, conversion processes; large scale circulation patterns with particular emphasis upon turbulence at the synoptic scale; weather processes; regional climates.

Wi Qtr. 2 2-hr cl. Prereq: 622.01 or permission of instructor.

**822 Microclimatology G 5**

Radiation and turbulence processes, conduction; variation in wind, temperature, humidity, soil moisture, evaporation, soil temperature; influence of vegetation and artificial structures.

Sp Qtr. 2 2-hr cl. Prereq: 620 or 622.01 or permission of instructor.

**823 Applied Climatology G 5**

Analysis of climatic and environmental change on various time scales; human impact on climate; theory and application of long-range and climate forecasting.

Sp Qtr. 2 2-hr cl. Prereq: 623.01 or permission of instructor.

**840 Seminars in Location Analysis**

The development of theory in location analysis and its application to selected problems.

**840.01 Location Theory G 3-5**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs.

**840.02 Problems G 3-5**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs.

**840.03 Approaches and Issues in Economic Geography G 3-5**

Current issues and problems in economic geography.

Su Qtr. 2 2-hr cl. Prereq: 640 or permission of instructor. Repeatable to a maximum of 5 cr hrs.

**845 Seminars in Transportation Geography**

The development of theory in transportation geography and its application to selected problems.

**845.01 Theory of Transportation Geography G 3-5**

Repeatable to a maximum of 30 cr hrs.

**850 Seminars in Urban Geography**

The development of theory in urban geography and its application to selected problems.

Au, Wi, Sp Qtrs.

**850.01 Spatial Organization of the City G 3-5**

Intra-urban analysis, density and land value gradients, residential differentiation, neighborhood and community, and the urban development process.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

**850.02 Urban Systems Analysis G 3-5**

Inter-urban analysis; theory of the evolution of urban systems, structural characteristics of sets of cities, recent processes of change, notably deconcentration.

Repeatable to a maximum of 10 cr hrs.

**850.03 Third World Urbanization G 3-5**

Examination of role of cities in development processes and their characteristics, historical evolution, related policies, and other aspects such as migration, innovation diffusion, and labor markets.

Repeatable to a maximum of 10 cr hrs.

**855 Regional Input-Output Modeling and Extensions G 5**

Advanced analysis of regional economic systems; foundations and extensions, data organization, assumptions and limitations of input-output modeling; extensions include SAMS, forecasting and CGE models.

Au Qtr. 2 2-hr cl. Prereq: 655 or permission of instructor.

**860 Seminars in Political Geography**

The development of theory in political geography and its application to selected problems.

Prereq: 660 or permission of instructor.

**860.01 Theory of Political Geography G 3-5**

Repeatable to a maximum of 30 cr hrs.

**860.02 Problems in Political Geography G 3-5**

Repeatable to a maximum of 30 cr hrs.

**870 Seminars in Population and Social Geography**

The development of theory in population and social geography and its application to selected problems.

Au, Wi, Sp Qtrs.

**870.01 Theory of Population and Social Geography G 3-5**

Repeatable to a maximum of 30 cr hrs.

**870.02 Problems in Population and Social Geography G 3-5**

Repeatable to a maximum of 30 cr hrs.

**880 Seminars in Cartography G 3-5**

Readings and research in cartography.

Au Qtr. Prereq: 780 or written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**882 Development of Geographic Thought G 4**

The evolution of concepts concerning the nature, scope, and methodology of geography; present focus and trends as reflected in current literature.

Sp Qtr. 3 cl.

**883 Application of Quantitative Methods in Geography**

Application of quantitative methods to geographic problems; spatial statistics, area sampling, maps of residuals, regionalization methods, and simulation maps.

Wi, Sp Qtrs. 2 cl, 2 lab hrs. Prereq: Course in introductory statistics and permission of instructor. Decimal subdivisions to be taken in sequence.

**883.01 Applications I G 4****883.02 Applications II G 4****889 Seminars in Geography G 1**

Topics to be announced each quarter.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**896 Interdepartmental Seminar in Polar and Alpine Studies G 1-3**

A seminar on selected topics involving anthropology, biology, climatology, exploration, geology, glaciology, microbiology, and soils.

Sp Qtr. 1 3-hr cl. Prereq: Permission of instructor. Given cooperatively by the Byrd Polar Research Center, the College of Biological Sciences, and the departments of Geography, Geological Sciences, and Plant Biology.

**899 Interdepartmental Seminars G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interests; topics to be announced each quarter.

**983 Special Topics in Quantitative Geography G 5**

Applications of advanced mathematical and statistical models to problems in geographical analysis.

Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: 883.01 and 883.02. Repeatable to a maximum of 15 cr hrs.

**999 Research in Geography: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Geological Sciences**

275 Mendenhall Laboratory, 125 South Oval Mall, 292-2721

Antarctic Marine Ecology and Policy

See EEOB/Int Stds/Nat Res/597.02.

**100 Earth Systems I: Geologic Environment U 5**

The materials of the Earth's crust, the processes that produce and modify them, and the development of the Earth and its life forms through time.

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab, 1 half-day field trip. Not open to students with credit for 121 or 122. Not intended for ASC BS students. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

**107 Field-based Introduction to Oceanography U 3**

Origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance.

Su Qtr. 1 week, full-time at Stone Lab. Prereq: Permission of instructor.

**110 History of Life on Earth-Global Change in the Biosphere U 5**

3.5 billion years of biosphere global change; introduction to major evolutionary and extinction events; processes responsible for change; and biosphere, atmosphere, and lithosphere interrelationships.

Wi, Sp Qtrs. 4 cl, 1 lab/discussion. H110 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 100, or Biology 102 or 114, or permission of instructor. This course is available for EM credit. NS Admis Cond course. GEC phys sci course.

**121 Physical Geology U 5**

Minerals and rocks and their origin; land forms and how they are produced; structural features of the Earth's crust.

Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. H121 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Math 104. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

**122 Historical Geology U 5**

The history of the Earth and its inhabitants through geologic time.

Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. H122 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 121. Recommended second course in geol sci for science majors. GEC phys sci course. NS Admis Cond course.

**201 Introductory Paleontology U 5**

An introduction to animal and plant groups significant in the geologic record. Sp Qtr. 4 cl, 1 2-hr lab, 1 all-day field trip. Prereq: 122 and 5 cr hrs in biological sciences.

**203 Geology and the Environment U 5**

Application of basic geologic knowledge to problems resulting from society's use of the Earth and its resources.

Au, Sp Qtrs. 2 2-hr cl. 1 2-hr lab. Prereq: 100 or 121. Not open to students with credit for 103. GEC phys sci course. NS Admis Cond course.

**204 Water Resources U 5**

Occurrence, movement, and behavior of water in the hydrologic cycle with reference to scientific and technological problems relating to water-resources development and conservation.

Wi Qtr. 5 cl. Prereq: 121. NS Admis Cond course.

**205 Physical Geology of the Earthlike Planets U 5**

Comparison of the geological processes of Earth to those on the Moon, Mars, Venus, and Mercury with particular attention to surface environments.

Sp Qtr. Prereq: 121. GEC phys sci course.

**206 Physical Oceanography and Marine Geology U 5**

The origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance.

Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 100. GEC phys sci course. NS Admis Cond course.

**210 Energy, Mineral Resources, and Society U 5**

Geological origin, world distribution, and uses of mineral resources critical to society; topics include mineral and fossil fuels, metallic ores, and industrial minerals.

Wi Qtr. 5 cl. Prereq: 100 or 121. GEC phys sci course. NS Admis Cond course.

**212\* Common Minerals and Rocks U 3**

A study of the common minerals and rocks, their associations, occurrences, identifying properties, and origin.

Sp Qtr. 3 2-hr labs. Prereq: 121 and Chem 121. Not open to students with credit for 223.

**H220 Contemporary Topics in Geological Sciences U 5**

Geological processes and their underlying principles; diverse issues of current interest; modern investigative techniques introduced in laboratory.

Sp Qtr. 2 cl, 1 3-hr lab, 1 2-hr rec/disc, 1 4-day field trip, 2 3-4 hr field trips. Prereq: Introductory geological sciences; and honors student or permission of instructor.

**221 Introductory Mineralogy and Crystallography U 5**

Internal and external symmetry of minerals; relationship of physical properties to crystal structure; introduction to elements of optical mineralogy; sight identification of about 80 minerals.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: Chem 121. Not open to students with credit for 414.

**222 Introductory Optical Mineralogy U 5**

Elements of optical mineralogy; mineral properties in plane and cross-polarized light; mineral identification in powders and thin-sections; crystal chemistry of rock-forming minerals.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 221.

**223 Introductory Petrology U 5**

Origin, occurrence, association, and mineral composition of the common rocks; laboratory includes work by megascopic and microscopic methods.

Wi Qtr. 2 cl, 3 2-hr labs. Prereq: 121 and 221. Not open to students with credit for 212.

**245 Computational Geology U 5**

Computer-oriented introduction to data analysis in the geosciences; topics include dimensional analysis and similitude, error analysis, geostatistics, sampling, linear regression, and covariance modeling.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Math 152, or written permission of instructor. GEC data analysis course.

**280 Geophysical Principles U 5**

Introduction to methods, practices and physical principles of geophysics including wave propagation, static fields, and the concept of space-time relationships; geologic interpretation of data.

Au, Wi Qtrs. 4 cl, 1 2-hr lab. Prereq: 121, Math 151, and Physics 131.

**293 Individual Studies U 1-3**

Special problems in the geological sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Group study of special topics in various fields of the geological sciences.

Su, Au, Wi, Sp Qtrs. H294 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**414 Crystallography U 3**

Periodicity and symmetry in crystalline materials, coordinate systems and lattices, crystallographic notation and calculations, group concepts, graphical methods, and selected applications.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: Math 153. Not open to students with credit for 214.

**H451 Science in the Courtroom U 5**

Analysis of hydrologic, geologic, and chemical data from an infamous Superfund site as presented by expert witnesses in a famous trial.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 121, Chem 122, and Math 152; or permission of instructor. GEC phys sci course.

**502 Stratigraphy and Sedimentation U G 5**

Principles of, and procedures in, stratigraphy and sedimentation, illustrated by field and laboratory studies of sedimentary rocks.

Au, Sp Qtrs. 4 cl, 1 2-hr lab, and weekend field trips. Prereq: 223.

**530 Structural Geology U G 5**

An introduction to the principles of rock deformation, the classification and physical origin of rock structures, and crustal tectonic processes.

Sp Qtr. 3 cl, 2 2-hr labs, 1 3-to-4 day field trip. Prereq: 121 and Physics 131.

**550 Geomorphology U G 5**

Detailed study of processes that shape the land surface and the forms produced under diverse climates.

Sp Qtr. 4 cl, 1 2-hr lab, field trips. Prereq: 122 and Chem 122, or permission of instructor.

**570 Senior Thesis U G 1**

The preparation of a report of professional quality, based on a research project.

Su, Au, Wi, Sp Qtrs. Prereq: Sr standing in geol sci and permission of instructor. To be taken during the qtr the student intends to hand in the thesis.

**580 Field Work and Laboratory Work in Earth Science U G 5**

Essentials of field and laboratory observation; mapping and data accumulation in the solution of earth-science problems.

Su Qtr. Prereq: 30 qtr hrs in physical or biological sciences, with a minimum of 15 qtr hrs in geol sci and permission of instructor; Geol Sci 201, 212, and 550 recommended. Repeatable to a maximum of 10 cr hrs.

**581 Field Geology I U G 5**

Concentrated training in the basic essentials of field observation and mapping; the work is done in central Utah, with headquarters in Ephraim.

Su Term 1 Prereq: 223, 530, and written permission of instructor. Requires full time of student.

**582 Field Geology II U G 4**

Continuation of 581.

Su Term 2 Prereq: 581. Requires full time of student.

**583 Field Geology for Science Teachers U G 3**

Application of geological principles and interpretation of earth features in such selected areas as the Appalachian Mountain system, the Bahamas, Lake Erie, etc.

Wi, Sp Qtrs. 5-10 days between Au and Wi or Wi and Sp Qtrs; pre-trip meetings and post-trip meetings and reports. Prereq: 100 or equiv and permission of instructor. Intended primarily for in-service teachers and education majors. May not be used to satisfy BS degree requirements in geol sci. Repeatable to a maximum of 9 cr hrs.

**584 Principles of Oceanography for Science Teachers U G 3**

Origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance.

Wi, Sp Qtrs. 1 week. Prereq: 30 qtr hrs in physical sciences or biological sciences and permission of instructor. Intended for in-service teachers and education majors. May not be used to satisfy BS, MS, or PhD requirements in geol sci. Not open to students with credit for 107 or 206.

**600 Sedimentation and Sedimentary Rocks U G 5**

Source, dispersal, and accumulation of sediments; the interpretation of the environmental distribution of sedimentary rocks.

Au Qtr. 4 1-hr cl, 1 2-hr lab arr. Prereq: 502.

**601 Sedimentary Petrology**

Identification and interpretation of sedimentary rocks based on mineralogic and textural study of thin sections and hand specimens.

Prereq: 600 or permission of instructor.

**601.01 Sedimentary Petrology of Sandstones U G 5**

Wi Qtr. 3 cl, 2 2-hr labs.

**601.02 Sedimentary Petrology of Carbonate Rocks and Shales U G 5**

Sp Qtr. 3 cl, 2 2-hr labs.

**602 Carbonate Depositional Systems****602.01 Carbonate Depositional Systems I U G 3**

The study of carbonates in modern settings including the origin, composition, and identification of constituents and cement, and depositional environments.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 502 or 600, or equiv.

**602.02 Carbonate Depositional Systems II U G 2**

The field study of carbonates in a modern setting such as the Bahamas or southern Florida.

Sp Qtr. 7-day field trip preceding the qtr. Prereq: 602.01 and permission of instructor.

**603 Stratigraphy U G 5**

Advanced study of the principles and procedures of stratigraphic nomenclature, subdivision, correlation, and interpretation, with examples from the international stratigraphic record.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 502.

**604 Sequence Stratigraphy U G 5**

Advanced study of the principles and practice of sequence stratigraphy; cyclicity in the stratigraphic record; computer modeling of sedimentary patterns; and reservoir characterization.

Au, Sp Qtrs. 4 cl, 1 2-hr lab, field trips. Prereq: 502 or equiv.

**607 Fundamentals of Geographic Information Systems U G 4**

Basic principles of geographic and land information systems and their use in spatial analysis and information management.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Sr standing. Not open to students with credit for Geog 685; or 607 in C&R Plan, Civil En, Geod Sci, Geog, or Nat Res. Cross-listed in City and Regional Planning, Civil Engineering, Geodetic Science, Geography, and Natural Resources.

**608 Paleobotany**

Prereq: 10 cr hrs in biological sci and permission of instructor. Cross-listed in Plant Biology.

**608.01 Lecture U G 3**

Structure, stratigraphic distribution, and evolution of fossil plants.

Sp Qtr. 3 cl. Not open to students with credit for Plnt Bio 608.01 or 625.

**608.02 Laboratory U G 2**

Examination of fossil plants, techniques, and preparation.

Sp Qtr. 2 2-hr lab. Not open to students with credit for Plnt Bio 608.02 or 625.

**613 Micropaleontology U G 5**

Advanced consideration of the preservation, collection, morphology, development, interrelations, and stratigraphic distribution of major groups of animal microfossils.

Au Qtr. 2 cl, 3 2-hr labs. Prereq: 201 or equiv.

**614 Paleobiology U G 5**

Advanced consideration of the preservation, morphology, development, and interrelations of major groups of animal megafossils.

Wi Qtr. 2 cl, 3 2-hr labs. Prereq: 201 or equiv.

**615 Paleocology U G 5**

Advanced treatment of autecology and benthic marine community paleocology from both conceptual and procedural viewpoints.

Sp Qtr. 4 cl, 1 2-hr lab, 1 wkend field trip. Prereq: 614 or permission of instructor.

**617 Petrography U G 5**

Interpretation of mineral assemblages and textures of igneous, metamorphic, and sedimentary rocks; cathodoluminescence and fluorescence petrography; and electron probe microanalysis will supplement standard techniques.

Au Qtr. 1 cl, 4 2-hr labs. Prereq: 223 or equiv.

**618 Advanced Historical Geology U G 5**

Principles of historical analysis, with emphasis on the geologic history of North America in the Paleozoic, Mesozoic, and Cenozoic eras.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 502 or equiv.

**620 Principles of Isotope Geology U G 5**

Theory of natural isotope abundance variations and applications to problems in the earth sciences.

Au Qtr. 5 cl. Prereq: Sr standing in geol sci or related fields.

**621 Introduction to Geochemistry U G 5**

Applications of the law of mass action and chemical thermodynamics to mineral equilibria of geological and geochemical interest.

Au Qtr. 5 cl. Prereq: Sr standing in geol sci or related fields; Chem 123 or permission of instructor.

**624\* Microscopy of Opaque Minerals U G 3**

Application of the petrographic microscope to the study of opaque minerals and ores, their identification, textures, and paragenesis; polished section preparation, etch tests, and micro-chemical tests.

Wi Qtr. 3 2-hr labs. Prereq: 223.

**625 Igneous Petrology U G 5**

Petrography, petrogenesis, and occurrence of igneous rocks, with special emphasis on phase equilibria; macroscopic and microscopic examination of igneous and petrographic suites in the laboratory.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 223.

**626 Metamorphic Petrology U G 5**

Petrography, petrogenesis, and occurrence of metamorphic rocks; macroscopic and microscopic examination of metamorphic rocks and selected petrographic suites in the laboratory.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 223.

**627\* Environmental Geochemistry U G 5**

Application of principles of geochemistry and isotope geology to an understanding of environmental processes, including the characterization of natural water, weathering products, and sedimentary rocks.

Wi Qtr. 5 cl. Prereq: 621.

**628\* Environmental Isotope Geochemistry U G 5**

Use of natural and anthropogenic radioactivity and of natural variations in the isotope compositions of selected elements to study geochemical processes on the Earth's surface.

Wi Qtr. 5 cl. Prereq: 621.

**629 Petrologic Phase Equilibria U G 5**

Application of phase equilibrium diagrams to problems of igneous and metamorphic petrology.

Au Qtr. 5 cl. Prereq: Sr standing in geol sci or related fields, or permission of instructor.

**635\* Advanced Crystallography U G 4**

Point isometries, derivation of crystallographic point groups, space-lattice types, and crystallographic space-group types; crystallographic calculations emphasizing the metric matrix and changes of basis.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 221 or 414 or equiv.

**636 Advanced Mineralogy U G 4**

Crystallography and crystal chemistry of the rock-forming silicate minerals.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 221 or 414 or equiv.

**637 X-Ray Diffraction U G 3**

Emphasis on diffraction by crystalline powders; factors affecting the position and intensity of diffraction maxima; applications include qualitative and quantitative analysis.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 414 or permission of instructor.

**639\* Clay Mineralogy U G 3**

Relationship of structures and chemical composition of clay minerals to properties, origin, occurrence, and applications; evaluation of X-ray, differential thermal, infrared, and electron microscope data.

Sp Qtr. 3 cl. Prereq: 637 or permission of instructor.

**641 Geostatistics Laboratory U G 2**

Computer-oriented application of statistical methods to geodata analysis; topics include error analysis, applied geodata probability and statistics, sampling, least squares, and linear regression.

Wi Qtr. 2 cl. Prereq: Stat 528, prereq or concur: Stat 529, or written permission of instructor.

**642 Geomathematical Analysis U G 5**

Principles of geoscientific analysis and computing, including digital inversion, factor analysis, discriminant analysis, spectral analysis, digital systems analysis, and presentation graphics for the earth sciences.

Sp Qtr. 5 cl. Prereq: 641 and Math 153, or written permission of instructor.

**644\* Geotectonic Evolution of the Continents U G 5**

Survey of lithotectonic assemblages and structural associations in Archean, Proterozoic, and Phanerozoic orogenic terranes in relation to tectonic models for crustal evolution.

Wi Qtr. 5 cl. Prereq: 223, 502, and 530; or written permission of instructor.

**645 Advanced Structural Geology U G 5**

Mechanisms of deformation; dynamic and kinematic analysis of rock structures; field and laboratory methods of structural analysis.

Sp Qtr. 4 cl, 1 2-hr lab.

**646 Geodynamics U G 5**

Application of mathematical and physical methods to the solution of geologic problems in heat flow, plate tectonics, mountain building, ground-water flow, and river mechanics.

Au Qtr. 5 cl. Prereq: 530 and written permission of instructor.

**650 Glacial and Pleistocene Geology U G 5**

The features produced by glaciers, present and past, and the history of glaciation during the Pleistocene.

Sp Qtr. 5 cl. Prereq: 550.

**651 Hydrogeology U G 5**

Geologic and hydrologic factors controlling the occurrence, movement, storage, and chemical quality of ground water; exploration, evaluation, development, and management of ground-water resources.

Au Qtr. 4 cl, 1 2-hr lab, 1 all-day field trip. Prereq: 121 and Math 153.

**652 Hydrogeologic Field Studies U G 5**

Field study of various hydrogeologic terranes incorporating the use of hydrologic field equipment and testing procedures.

Sp Qtr. 3 cl, 3-5-day field trips, 2 3-day field trips. Prereq: 651.

**660 Geology of Mineral Deposits****660.01 Geology of Metallic Deposits U G 5**

The occurrence, origin, distribution, properties, and uses of the metallic minerals.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: 223.

**660.02 Geology of Nonmetallic Mineral Deposits U G 5**

The occurrence, origin, distribution, properties, and uses of the nonmetallic minerals.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 223.

**670 General and Economic Geology of Selected Areas U G 3,5**

Concentrated field study of the stratigraphy, structural geology, tectonics, petrology, and geomorphology of a selected region, with special attention to the economic utilization of earth materials.

Au Qtr. 5 or 10-day field trip preceding the qtr. Post-trip readings and report required. Prereq: 502, 530, and 550; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**675 Scanning Electron Microscopy and X-Ray Microanalysis U G 2**

Theory of operation and hands-on training in the use of the scanning electron microscope and X-ray microanalyzer. Students use their own samples in lab.

Au, Sp Qtrs. 1 cl, 1 2-hr lab arr. Prereq: Written permission of instructor. This course is graded S/U.

**680 Earth Physics U G 5**

Physics of the solid Earth: the internal structure, density, seismic velocities, gravity and geomagnetic fields; thermal history and surface heat flux, mantle convection; crustal evolution and tectonic models of the crust and lithosphere.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: 530, Math 153, and Physics 133.

**681 Geophysical Exploration: Gravity and Magnetism U G 3**

Gravity and magnetic exploration principles applied to subsurface investigations; field exercises involve computer processing of data collected using professional instruments.

Sp Qtr. 2 cl, 1 2-hr lab, field trip. Prereq: Math 153 and Physics 133, or permission of instructor.

**686 Environmental Geophysics U G 5**

Principles and applications of geophysical techniques to environmental and site characterization in the shallow subsurface.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 121, Math 151, and Physics 131.

**687 Exploration Geophysics U G 5**

Geophysical practices in exploration; seismology and methods in sedimentary rocks; electrical methods in crystalline rocks; remote-sensing and potential-field methods in regional analysis.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 121, Math 151, and Physics 131.

**693 Individual Studies**

Special problems in any branch of the geological sciences for which the student has the proper qualifications.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Courses repeatable in any combination of decimal subdivisions.

**693.01 Economic Geology U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.02 Engineering Geology U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.03 Extraterrestrial Studies U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.04 Field Geology U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.05 Geochemistry U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.06 Geomorphology U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.07 Geophysics U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.08 Glaciology and Glacial Geology U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.09 History of the Geological Sciences U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.10 Hydrogeology U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.11 Marine Geology, Limnology, and Oceanography U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.12 Paleontology U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.13 Petrology and Petrography U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.14 Photogeology U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.15 Sedimentation U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.16 Stratigraphy U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.17 Structural Geology U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.18 Earth Science Education U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.19 Unspecified U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.20 Thermochemical Mineralogy U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.21 Crystallochemical Mineralogy U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.22 X-Ray Mineralogy U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.



**693.23 Clay Mineralogy U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.24 Physical Properties of Crystals U G 1-5**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Group study of special topics in various fields of the geological sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

**703\* Principles of Biostratigraphy U G 3**

Principles of zonal and azonal biostratigraphy; definition, identification, and correlation of standard biostratigraphic units; quantitative development of chronostratigraphically significant azonal frameworks.

Sp Qtr. 3 cl. Prereq: 201 or 613 or 614; and 603 or equiv; or written permission of instructor.

**713\* Taxonomy and Phylogeny in the Fossil Record U G 3**

Theory and practice of taxonomy and phylogenetic reconstruction as applied to organisms in the fossil record.

Au Qtr. 3 cl. Prereq: 614 or permission of instructor.

**714\* Biometry U G 3**

Biometric principles and methods as applied to the solution of taxonomic, ontogenetic, and evolutionary problems in the fossil record.

Au Qtr. 3 cl. Prereq: 614 and 641 or equiv; or permission of instructor.

**717\* Containment and Remediation of Contaminants in Ground Water U G 5**

Examination of approaches to contain and/or remediate contaminants in ground water, including site assessments, design approaches, and case studies.

Sp Qtr. 3 cl, 2 labs. Prereq: 651; 752 recommended.

**718 Geochemistry of Natural Waters U G 5**

Examination of the processes that control chemical equilibria in natural waters: acid/base reactions, metal complexation/speciation, and oxidation-reduction processes.

Sp Qtr. 3 cl. Prereq: Chem 122 and Math 152; or equivs.

**719 Environmental Organic Geochemistry U G 5**

Diagenesis and fate of organic substances in natural environments.

Au Qtr. 5 cl. Prereq: 718, and Chem 520 or permission of instructor. Intended for students in geol sci, civil en, and the grad environmental sci program.

**720\* Noble Gas Geochemistry U G 4**

Application of noble gas, K-Ar, and <sup>40</sup>Ar/<sup>39</sup>Ar research methods to geological and geochemical problems.

Sp Qtr. 4 cl. Prereq: 620 or equiv, or written permission of instructor.

**725\* Isotope Geochemistry of Igneous and Metamorphic Systems U G 4**

Advanced study of the principles, methods, and applications of isotope geochemistry to igneous and metamorphic processes and the origin and evolution of the Earth.

Sp Qtr. 4 cl. Prereq: 620 or equiv or written permission of instructor, 625 recommended.

**737\* Crystal Structure Analysis U G 4**

Theory and practice of single crystal X-ray and elastic neutron diffraction, including four-circle diffractometry, profile analysis, data reduction, and least-squares structure refinement.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Math 153 and Physics 113 or 133; or equivs.

**746\* Rheological Properties of Rocks U G 3**

Principles of rock rheology and empirical studies of brittle and ductile deformation mechanisms, with special reference to applications to crustal and mantle problems.

Sp Qtr. 3 cl. Prereq: 530.

**751\* Quantitative Ground-Water Flow Modeling U G 5**

Principles of analytical and numerical techniques in modeling ground-water flow in porous media, development of two- and three-dimensional steady-state and transient flow codes.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 651.

**752 Contaminant Hydrogeology U G 5**

Fate and transport of contaminants in the subsurface; methods used to characterize, evaluate, and remediate sites contaminated by hazardous wastes and pollutants.

Wi Qtr. 4 cl, 1 2-hr lab, 2 all-day field trips. Prereq: 651.

**754 Ground-Water Risk Assessment U G 5**

Quantitative risk assessment for contaminant migration in ground-water by applying numerical modeling approaches.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 651 or equiv.

**779\* Physical Properties of Minerals and Rocks U G 3**

Quantitative survey of electrical, magnetic, elastic, inelastic, radioactive, thermal, density, and seismic properties and chemical compositions of rocks and minerals.

Wi Qtr. 3 cl. Prereq: 221, 600, and 617; or equivs; or written permission of instructor.

**781\* Gravimetry U G 3**

Analytical treatment of concepts and methods of gravimetry; introductory theory of gravitational potential; geological interpretation of gravity data.

Au Qtr. 3 cl. Prereq: 681 or written permission of instructor. Not open to students with credit for 643.

**782\* Magnetometry G 3**

Advanced magnetic theory and practice applied to investigations of the subsurface, including interpretation of surface, airborne, and satellite magnetic measurements.

Au Qtr. 3 cl. Prereq: 681 or written permission of instructor.

**H783 Honors Research U 3-5**

A program of individual study arranged for students enrolled in the honors program, with individual conferences and reports; requires presentation and oral defense of an honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the geol sci courses taken and an average of at least B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degree BA or BS with distinction in geol sci. Failure to receive the mark of S in this course is a disqualification for departmental honors. This course is graded S/U.

**784\* Paleomagnetism U G 3**

Physical and mineralogical basis for permanent magnetization in rocks, physical basis of measurement, geological basis for sampling, and geological constraints on interpretation of results.

Sp Qtr. 3 cl. Prereq: 680 or equiv or written permission of instructor.

**800 Seminar in Stratigraphy G 3**

Consideration of current and classical problems and procedures in biostratigraphic and lithostratigraphic analysis and synthesis.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**801 Seminar in Sedimentation and Sedimentary Rocks G 3**

Consideration of sedimentation, and the structures, petrography, depositional environments, and paleontologic interpretation of sedimentary rocks.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**810 Seminar in Paleobiology G 3**

Advanced topics in paleozoologic and paleobotanic morphology, taxonomy, and procedure; current questions in biostratigraphy, paleoecology, and evolutionary development of fossil floras and faunas.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**821 Seminar in Isotope Geology and Geochemistry G 3**

Discussion of selected topics in isotope geology, geochronology, geochemistry, and cosmochemistry.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**822 Seminar in Petrology and Optical Mineralogy G 3**

Selected topics in optical mineralogy and igneous, sedimentary, and metamorphic petrology.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**840 Seminar in Structural Geology G 3**

Selected topics in structural geology, rock deformation, and geotectonics.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**850 Seminar in Geomorphology and Quaternary Geology G 3**

Current and classical problems in geomorphology and Quaternary geology, such as desert and coastal geomorphology, submarine topography, periglacial and karst morphology, volcanology, and Quaternary geochronology.

Au, Wi Qtrs. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**851 Seminar in Hydrogeology and Oceanography G 3**

Topics in hydrogeology and oceanography, such as ground-water hydrology and hydraulics, basin management, reef and atoll development, or paleo-oceanography.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**860 Seminar in Mineral Deposits and Fossil Fuels G 3**

Study of selected deposits of metallic minerals, industrial rocks, and minerals, or fossil fuels.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**874 Seminar in the History of the Geological Sciences G 3**

Discussion of the development of the geological sciences, intended to give the student a firm basis for comprehension of the sciences as they exist today.

Wi Qtr. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**880 Seminar in Geophysics G 3**

Investigation and discussion of recent developments in geophysics, including exploration geophysics, glaciology, solid-earth geophysics, paleomagnetism, tectonics, or engineering evaluation.

Sp Qtr. 2 2-hr cl. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs.

**888 Colloquium in the Geological Sciences G 1**

Discussion of current research in the geological sciences.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in geol sci. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**896 Interdepartmental Seminar in Polar and Alpine Studies G 1-3**

A seminar on selected topics involving anthropology, biology, climatology, exploration, geology, glaciology, microbiology, and soils.

Sp Qtr. 1 cl. Prereq: Permission of instructor. Given cooperatively by the Byrd Polar Research Center, the College of Biological Sciences, and the departments of Geography, Geological Sciences, and Plant Biology.

**999 Research in the Geological Sciences G 1-18**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## German

314 Cunz Hall, 1841 Millikin Road, 292-6985

### Placement and Proficiency Examinations

In order to insure proper registration, placement tests are required of all students who continue their study of German in the dept after beginning their language in high school. Such tests are given during Summer Orientation and daily Monday-Friday each quarter. Consult the College of Humanities section of the Colleges of the Arts and Sciences Bulletin or the dept. Students who are given advanced standing in the dept as a result of the placement and proficiency examination become eligible for University credit.

### Excess Entrance Credits in German

Freshmen who have excess credits in a foreign language are eligible for examination for advanced standing. The examination is given at the same time as the placement tests mentioned above.

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 101.51, etc.) and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence through the 104 level.

### General Prerequisites for Courses Numbered 600

Unless otherwise indicated, the prerequisites for all 600-level courses are: 201, 301, 401, and one German literature course at the 400 level (420, 421, 422). Exceptions may be allowed by instructors for students with special qualifications.

### General Prerequisites for Courses Numbered 700

Prerequisites for 700-level courses are grad standing, or 4th yr standing with 10 cr hrs in German at the 600-level, and permission of chairperson.

### General Prerequisites for Courses Numbered 800

Prerequisites for 800-level courses are graduate standing and permission of chairperson.

### 101 Elementary German I

Development of aural comprehension, speaking, reading, and writing skills. Open to students with no prior instruction in German and to those with a maximum of one year of high school German and a placement test score from 0-10. Not open to students with credit for 100.01 or 100.02, or to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

#### 101.01 Classroom Track U 5

5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

#### 101.51 Individualized Track U 1-5

Students register for and complete from 1 to 5 cr hrs during the qtr. Not open to students with 5 cr hrs in 101.02. Repeatable to a maximum of 5 cr hrs. Students who complete 5 hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

### 102 Elementary German II

Development of aural comprehension, speaking, reading, and writing skills. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

#### 102.01 Classroom Track U 5

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 100.02, or 101.01, or 5 cr hrs in 101.51 or 101.02. Also open to students with a maximum of two years of high school German and a placement test score from 11-21. This course is available for EM credit.

#### 102.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Prereq: 100.02, or grade of B- or above in 101.01, or 5 cr hrs in 101.02 or 101.51, or permission of instructor. Also open to students with a maximum of two years of high school German and a placement test score from 11-21. Not open to students with 5 cr hrs in 102.02. Repeatable to a maximum of 5 cr hrs. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

#### 102.66 Intensive German for Review I U 5

Review of basic structures, vocabulary, and skills needed for entry into German 103.01.

Au, Sp Qtrs. 3 1.5-hr cl. Prereq: 2 or more years of high school German and placement test score of 0-10. Not open to native speakers of German through regular enrollment or EM credit. Not open to students with credit for 101.01, 101.51, 102.01, 102.51. Students who test into 102.66 during Wi or Sp Qtr may audit 101.01.

### 103 Intermediate German I

Reading; oral and written practice; grammar review; students may select from among the following subdivisions which emphasize specific skills and subject matter.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 102.01, or 5 cr hrs in 102.51, or 102.02, 102.66, or 110, or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. (Not all decimal subdivisions offered every qtr.) GEC for lang courses.

#### 103.01 Basic U 5

Balanced use of the basic language skills: reading, aural comprehension, speaking, and writing.

5 cl. H103.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for H103.01: 102.01 with a grade of A or permission of instructor. Not open to students with credit for 103. This course is available for EM credit.

#### 103.51 Individualized Track U 1-5

Prereq: 102.01, or 5 cr hrs in 102.51, or 110, or equiv. Not open to students with credit for any decimal subdivision of 103. Repeatable to a maximum of 5 cr hrs. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

#### 103.66 Intensive German for Review II U 5

Intensive review of basic structures, vocabulary and skills needed for entry into German 104.

3 1.5-hr cl. Prereq: 101.01 or 5 cr hrs of 101.51, or 3 or more yrs of high school German and placement into 102 by placement exam. Not open to students with credit for German 102.01, 102.51, 102R, 103.01, 103.51. Not open to native speakers of German through regular enrollment or EM credit. Students who test into 103.66 during Sp Qtr may audit 102.01.

### 104 Intermediate German II

Reading; oral and written practice; vocabulary building; students may select from among the following subdivisions which emphasize specific skills and subject matter.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 103 or 112. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

#### 104.01 Basic U 5

Balanced use of the basic language skills: reading, aural comprehension, speaking, and writing. H104.01 (honors) may be available to students in an honors program or by permission of instructor.

5 cl. Prereq for 104.01: 103.01 or 112. Prereq for H104.01: H103.01 or 103.01 with a grade of A or permission of instructor. Not open to students with credit for 104. This course is available for EM credit.

#### 104.05<sup>A</sup> Science U 5

Advanced readings in scientific German.

Not open to students with credit for 104 or 114.

**104.51 Individualized Track U 1-5**

Arr. Prereq: 103.01 or 5 cr hrs in 103.51. Not open to students with credit for any decimal subdivision of 104. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from 1 cr hr to the next with proficiency at the level of 80% required for advancement.

**112 Intensive German U 5,10,15**

Elementary and intermediate German for students desiring comprehensive knowledge of German in the shortest possible time; students will devote their entire time to this course.

Su Qtr. Prereq: Permission of dept. Not open to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 or equiv may not register for credit. Enrollment limited to 20 students. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, and 103. Students may not register for any other course if they enroll in 112. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in German will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. No audit. GEC for lang course. FL Admis Cond course.

**115 Intermediate German U 10**

Intensive 10-week summer course taught in Dresden, Germany, combining the skill development in 103 and 104 with the cultural experience of living abroad.

Su Qtr. 5 3-hr cl. Prereq: 102 or 102.51. GEC for lang course.

**201 Intermediate German III: Texts and Contexts from 1945 to the Present U 5**

Development of reading, writing, listening, speaking skills through interaction with cultural and historical materials; trends/ideas in politics, society, culture of postwar and contemporary periods.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 104 or equiv. Not open to students with credit for 204 or 205; or to native speakers of this language through regular course enrollment or EM credit. No audit.

**202\*\* Business German I U 5**

Development of business-related cultural knowledge and communication skills in German; introduction to the world of German business through audio, video, print materials; four-skills course.

Wi Qtr. 3 1.5-hr cl. Prereq: 201 or equiv, or permission of instructor. No audit.

**203\*\* Intermediate German Conversation U 3**

Practice in spoken everyday idiomatic German, based on texts concerning German life today.

Wi, Sp Qtrs. 3 cl. Prereq: 104.02, any other 104 course, or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. No audit.

**230 Introduction to German Prose U 5**

Reading and discussion of German literary texts representing significant prose types, authors, and periods including fairytale, fable, diary, short story, novella, essay, and novel.

Wi Qtr. 5 cl. Prereq: 201 or equiv or permission of instructor.

**231 Introduction to German Poetry U 5**

Reading and discussion of selected German poetry, introducing major German poets and poetic forms; these include the folksong, ballad, sonnet, and religious and political poetry.

Au Qtr. 5 cl. Prereq: 201 or equiv or permission of instructor.

**232 Introduction to German Drama U 5**

Reading and discussion of German dramatic texts, representing influential forms, authors, and traditions: folk comedy, classical tragedy, the tragicomedy, the radio play, and documentary theatre.

Wi Qtr. 5 cl. Prereq: 201 or equiv or permission of instructor.

**260 German Literature**

Trends in German literature of the Middle Ages, the Renaissance and the Reformation as reflected in representative literary monuments.

3 1.5-hr cl. Prereq: English 110 or 111 or equiv. Credit does not apply toward a major in German. Taught in English. GEC arts and hums lit courses.

**260.01\* Love, Death, and Folly in German Literature before 1700 U 5**

Major works of German literature of the Middle Ages, the Renaissance, and the Baroque, in English translation.

Au Qtr. Not open to students with credit for 260.

**260.02\* The Family: German Literature after 1700 U 5**

Major German literary, autobiographical texts from the 18th to the 20th centuries in English translation as well as films.

Sp Qtr.

**260.03\* Ethics and Institutions: Soldiers and Bureaucrats U 5**

Major works of modern German literature in English translation, with a theme by which significant developments in German culture can be measured and examined.

Wi Qtr.

**261\*\* German Classics in Translation U 3**

Social and intellectual forces in Germany as reflected in German literature from the Enlightenment to the middle of the 19th century; masterpieces from Goethe to Gottfried Keller.

Wi Qtr. 3 cl. Credit does not apply toward a major in German. Taught in English.

**262\*\* Modern German Literature in Translation U 3**

Intellectual forces and literary trends in German literature from the end of the 19th century to the present; masterpieces from Gerhart Hauptmann to Bertolt Brecht.

Sp Qtr. 3 cl. Credit does not apply toward a major in German. Taught in English.

**H263 The Faust Theme U 5**

Major versions of the Faust story, their socio-cultural context, and their symbolic expression of recurring human concerns.

Au Qtr. 2 2.5-hr cl. Prereq: English 110 or 111 or equiv. Taught in English. GEC arts and hums lit course.

**275 Development of Contemporary Germany: Dresden Yesterday and Today U 5**

Introduction to German life and culture, past and present, including the new federal states; taught within summer study abroad program with students experiencing German culture first hand.

Su Qtr. 2 2.5-hr cl. Prereq: 102 and concur 115. GEC arts and hums cultures and ideas course.

**291 Early German Literature in Cultural Context U 5**

Origins and highlights of German culture and life as reflected in literary and poetic works, Germanic mythology, religion, and the arts.

Sp Qtr. 5 cl. Not open to students with credit for 361. Taught in English. Supplemented by audio-visual aids. GEC arts and hums lit course.

**292 Modern German Literature in Cultural Context U 5**

Two hundred years of German literature, arts, philosophy, and social thought, as they reflect cultural and social life in German-speaking countries.

Au Qtr. 5 cl. Not open to students with credit for 362. Taught in English. Supplemented by audio-visual aids. GEC arts and hums lit course.

**293 Individual Studies U 2-5**

Individual investigation of minor problems in German language and literature.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of chairperson. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**294 Group Studies U 2-5**

Investigation of minor problems in German literature and language.

Au, Wi, Sp Qtrs. Prereq: Written permission of chairperson. Repeatable to a maximum of 10 cr hrs.

**298 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**298.01\*\* Domestic U 1-15**

Repeatable.

**298.02\*\* Foreign U 1-15**

Repeatable.

**299 Weimar and the Third Reich in German Literature and Film U 5**

Culture of the Weimar Republic and Nazi Germany in literature, film, the other arts; the roots of fascism and its echoes in postwar Germany.

Au, Sp Qtrs. 2 2-hr cl. Taught in English. GEC arts and hums cultures and ideas course.

**301 Advanced German I: Texts and Contexts from 1848 to 1945 U 5**

Practice of advanced language skills and development of cultural and historical knowledge through interaction with various materials trends/ideas in politics, society, culture.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 201 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. No audit.

**302\* Business German II U 5**

Continued development of cultural knowledge and communication skills in German; study of business trends, traditions, and structures through audio, video, print texts; four-skills course.

Sp Qtr. 3 1.5-hr cl. Prereq: 202 or equiv or permission of instructor. No audit.

**303 The Practice of Translation U 3**

German-English and English-German translation; texts from diverse areas; emphasis on improvement of German grammar, syntax, idiom, and style; discussion of common translation techniques.

Wi Qtr. 3 cl. Prereq: 201 or equiv or permission of instructor. No audit.

**399 The Holocaust in Literature and Film U 5**

Reading, analysis, and discussion of representative works pertaining to the Holocaust from the perspectives of the German and Ashkenazic traditions. Wi Qtr. 2 1.5-hr cl. Not open to students with credit for Yiddish 399. Cross-listed in Yiddish. Taught in English. GEC arts and hums lit course.

**401 Advanced German II: Texts and Contexts to 1848 U 5**

Continued practice of advanced language skills particularly pertaining to written texts and formal speech; broadening of cultural and historical knowledge from the Middle Ages to 1848 through interaction with various materials.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 301 or equiv or permission of instructor. Not open to students with credit for 410.

**409\* Advanced German Conversation U 3**

Practice in spoken German on topics of general interest and current events. Au Qtr. 3 cl. Prereq: 301 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

**420\* Studies in German Literature I (750-1700) U 5**

Development of German literature in its historical, social, and philosophical context from earliest times to the Age of Enlightenment.

Sp Qtr. 5 cl. Prereq: 201 or equiv, and one German literature course; or permission of instructor. Taught in German.

**421 Studies in German Literature II (1700-1870) U 5**

Development of German literature in its historical, social, and philosophical context from the Age of Enlightenment to German unification.

Sp Qtr. 5 cl. Prereq: 201 or equiv, and one German literature course; or permission of instructor.

**422\* Studies in German Literature III (1870-Present) U 5**

Development of German literature in its historical, social, and philosophical context from 1870 to the present.

Sp Qtr. 5 cl. Prereq: 201 or equiv, and one German literature course; or permission of instructor.

**463 German Culture of the 19th and 20th Centuries U 5**

Intellectual, artistic, and social trends in the German-speaking countries from 1815 to the present.

Sp Qtr. 5 cl. Prereq: 10 cr hrs beyond 104 of courses taught in German or permission of instructor. Taught in German.

**489\* National Reconstruction: Culture in the Postwar Germanies U 5**

Presentation of a broad picture of cultural developments in the modern German states from the end of World War II to the present.

Sp Qtr. 2 2-cl. Prereq: Sr standing.

**540 Literature and Life in German-Speaking Countries U G 3**

Discussion of significant literary and cultural developments reflecting aspects of life in German-speaking countries: Austria, Switzerland, and Germany; topic varies.

Au Qtr. 3 cl. Prereq: 201, 301, and one German literature course; or permission of instructor. Repeatable to a maximum of 9 cr hrs. GEC third writing course. Taught in German.

**550 Current Events in German-Speaking Countries U G 3**

Studies and intensive discussion of current cultural and social issues in the German-speaking world; newspaper readings, guest lectures, films, music and student presentations; topic varies.

Sp Qtr. 3 cl. Prereq: 10 cr hrs of German at the 200 level and 301 or equiv, or permission of instructor. Repeatable to a maximum of 9 cr hrs. Taught in German.

**560 Senior Seminar in German Literature U 5**

Intensive study and discussion of selected important issues, themes, trends, or individual authors; topic varies.

Wi Qtr. 3 cl. Prereq: 201, 301, and one 400-level German literature course, or permission of instructor. Repeatable to a maximum of 9 cr hrs. Taught in German.

**571 Basic German for Graduate Students G 5**

The fundamentals of German grammar, as required for the reading of German texts in the sciences, social sciences, and humanities.

Su, Au Qtrs. 5 cl. Prereq: Grad standing. No audit. Credit does not apply to the minimum hours required for the master's or doctoral degrees.

**572 German for Research I G 3**

Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Grade of C or above in 571 or equiv preparation demonstrated by a placement test. Open only to grad students. No audit. Repeatable to a maximum of 6 cr hrs. Credit does not apply to the minimum hours required for the master's or doctoral degrees.

**573 German for Research II G 3**

Reading of difficult material at a reasonable rate of speed and with only infrequent use of dictionaries. Completion of this course with a grade of A or B may be accepted by the student's dept as evidence of a thorough reading knowledge of German.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Grade of A or B in 572, or equiv preparation demonstrated by a placement test and permission of instructor. Open only to grad students. No audit. Repeatable to a maximum of 6 cr hrs. Credit does not apply to the minimum hours required for the master's or doctoral degrees.

**630 Introduction to Stylistics U G 5**

Composition on assigned topics, intensive translation, and comparative study of usage designed to develop a sophisticated expository style in the writing of German.

Sp Qtr. 4 cl. Prereq: 410, or 301 and written permission of instructor.

**635\* Practical German Pronunciation U G 5**

Standard German pronunciation; oral and written drill.

Wi Qtr. 2 2-cl. Prereq: Permission of instructor.

**641\* Language and Society in Interwar Vienna U G 5**

Interwar Viennese social and political structure, language and literary expression, ethnic diversity; arts and architecture; gender politics; transition of empire to republic; roots of Austro-fascism and anti-Semitism.

Au Qtr. 2 2-cl. Prereq: Jr standing or permission of instructor. Not open to students with credit for Yiddish 641. Cross-listed in Yiddish.

**660\* Masterpieces of German Literature U G 5**

Selections from works of major German writers; topic varies each year.

Su Qtr. 4 cl. Prereq: Permission of chairperson. Repeatable to a maximum of 15 cr hrs.

**671\* German Cinema to 1945 U G 5**

Development of film from the late nineteenth century to the end of WWII; fundamental elements of film and film analysis, film as an art form, and other aspects of film.

Su Qtr. 2 3-hr cl. Prereq: Jr standing or above or permission of instructor.

**672 German Cinema from 1945 to the Present U G 5**

Development of film in Germany from 1945 to period after reunification; fundamental elements of film and film analysis; developments in German film in light of cultural and historical frameworks.

Su Qtr. 2 3-hr cl. Prereq: Jr standing or above or permission of instructor.

**693 Individual Studies U G 2-5**

Investigation of minor problems in the various fields of German literature and philology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-15**

Investigation of minor problems in the various fields of German literature and philology.

Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701\* Introduction to Bibliography and Research U G 3**

The tools, problems, and methods of literary, philological, linguistic, electronic, and pedagogical research in Germanics; includes introduction to department, the profession, and professional writing skills.

Wi Qtr. 2 cl. Prereq: Grad standing or permission of instructor. This course is graded S/U.

**702\* Introduction to Literary Forms and Styles U G 5**

History of literary genres, their textual forms, their theories; the terminology of genre, literary structures, and devices and practice in analysis of various texts.

Sp Qtr. 2 cl. Prereq: Grad standing or permission of instructor.

**703 Introduction to Contemporary Critical Approaches to Literature U G 5**

Primary current methodological and theoretical approaches to German literary study and brief consideration of their history: positivism, hermeneutics, formalism, Marxism, structuralism, post-structuralism.

2 2.5-hr cl. Prereq: Grad standing or permission of instructor.

**705 Structure and Description of Modern Standard German U G 5**  
Phonological, morphological, and syntactic systems of modern German; lexical changes, non-standard varieties of the language; differences between East and West German usage.  
Sp Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Taught in German.

**706\*\* Forms of Contemporary German Usage U G 5**  
Analytical and practical study of the ways in which German is written and spoken today (colloquial speech, business and scholarly German, etc.); emphasis on oral and written practice.  
Sp Qtr. 4 cl. Prereq: Grad standing or permission of instructor or 409 and 410 or 630. Taught in German.

**740 Development of German Narrative Prose U G 5**  
The novel, Novelle, short story, and other forms of German prose: historical overview, theory, and selected primary texts as illustration.  
Sp Qtr. 4 cl. Prereq: Grad standing or equiv or permission of instructor.

**741 Development of German Drama U G 5**  
History and theory of the drama in Germany; methods of drama analysis; interrelationship of drama, theatre, and audience; study of selected texts.  
Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor.

**742 Development of German Poetry U G 5**  
Elements of German poetry; close study of representative poets and poems since the Baroque.  
Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor.

**750\* Periods of German Literary History: 800-1400 U G 5**  
Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.  
Wi Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**751 Periods of German Literary History: 1400-1700 U G 5**  
Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.  
Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**752 Periods of German Literary History: 1700-1850 U G 5**  
Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.  
Wi Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**753 Periods of German Literary History: 1850-Present U G 5**  
Study of major works chosen to present prominent themes and problems within the period; topic varies.  
Sp Qtr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**777 Colloquium in German Literature U G 2-5**  
Selected topics, problems, and works in the various fields of German literature.  
Au Qtr. Arr. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**H783 Honors Research U 3-5**  
Offers undergraduates with special aptitudes a greater opportunity for independent study than is possible in ordinary courses.  
Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the German courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**790 Foundations of Contemporary Critical Theory U G 5**  
Interdisciplinary survey of the theoretical bases of the major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.  
Wi Qtr. 2 2-hr or 5 cl. Prereq: Jr or sr or grad standing.

**792\* Interdepartmental Studies in the Humanities U G 3-5**  
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.  
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

**801\* Middle High German G 5**  
Intensive introduction to Middle High German; comprehension and application of grammatical principles; selected texts for linguistic analysis.  
Wi Qtr. 4 cl.

**802\*\* Old Saxon and Old High German G 5**  
Analysis of the structure of Old High German and Old Saxon and dialect differences, manuscript tradition, textual criticism, literary-cultural importance of major works.  
Sp Qtr. 4 cl.

**803\* Gothic G 5**  
Phonology and grammar of Gothic as a German dialect; selected passages from Wulfila's Bible; relationship of the Germanic languages to Old High German.  
Sp Qtr. 4 cl.

**806\* History of the German Language G 5**  
Basic concepts of historical linguistics; the major factors of change in the history of German from Proto-Germanic to the present.  
Au Qtr. 4 cl. Prereq: 801.

**810\* German Literary Criticism and Theory G 5**  
Historical overview and evaluation of critical methods; introduction to contemporary literary theories; the use-value of literary criticism.  
Wi Qtr. 2 2-hr cl.

**840 College Teaching of German G 5**  
Methods and techniques for teaching German at the college level.  
Au Qtr. 4 cl. Prereq: Permission of instructor. Not open to students with credit for 700. Intended for grad students in German.

**850 German Proseminar G 5**  
Selected topics in German literature, language, and culture; seminar discussion format with oral and written reports.  
Su, Au, Wi, Sp Qtrs. 4 cl. Repeatable to a maximum of 20 cr hrs.

**890^ Interdepartmental Studies in Critical Theory G 5**  
Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.  
Sp Qtr. 2 2-hr or 4 cl. Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in Comparative Studies in the Humanities, English, French, Spanish, and Women's Studies.

**893 Individual Studies G 2-5**  
Investigation of specific issues in German literature, culture, linguistics, and philosophy.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of chair of Graduate Studies Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**899^ Interdepartmental Seminar G 3-5**  
Two or more departments present seminars on subjects of mutual interest; topics to be announced.  
Sp Qtr. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

**903 Graduate Student Teaching Apprenticeship G 5**  
Opportunity for advanced graduate students to plan and teach in conjunction with faculty member a course at 200 or higher level.  
Au, Wi, Sp Qtrs. Prereq: A minimum of one year experience as GTA. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**960 Seminar in Modern German Literature: G 5**  
Topics vary in focus and methodology; emphasis may range from individual authors, works, or themes to theoretical or interdisciplinary issues; major research papers.  
Au, Wi, Sp Qtrs. 1 3-hr cl. Repeatable to a maximum of 45 cr hrs.

**970 Seminar in Older German Literature to 1700 G 5**  
Topics vary in focus and methodology; emphasis may range from individual authors, works, or themes to theoretical or interdisciplinary issues.  
Au Qtr. 3 cl. Repeatable to a maximum of 45 cr hrs.

**980\*\* Seminar in Germanic Philology G 5**  
Topics from historical and comparative studies of older Germanic dialects; structure of New High German and contemporary German.  
Wi Qtr. 3 cl. Not open to students with credit for 870. Repeatable to a maximum of 45 cr hrs.

**993 Individual Studies G 1-5**  
With the approval of the department chairperson, doctoral students may register for individual study in areas normally not covered by courses.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research in German: Thesis G 1-18**  
Research for master's thesis.  
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**999 Research in German: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Graduate School

247 University Hall, 230 North Oval Mall, 292-6031

**501 Graduate Study and Academic Careers U 1-5**

Exploration of graduate study and academic careers.

Su Qtr. 1 4-hr cl. Open only to SHOP students.

**594 Group Studies U 1-5**

Su Qtr. Arr. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**999 Research: Interdisciplinary G 1-18**

Interdisciplinary doctoral dissertation research approved by the Graduate School for one-of-a-kind programs.

Repeatable. This course is graded S/U.

## Greek

414 University Hall, 230 North Oval Mall, 292-2744

See also Classics and Modern Greek.

General Prerequisites for Courses Numbered 800 and Above

Prerequisites for admission to courses numbered 800 and above are graduate standing and permission of the chairperson.

**101 Elementary Ancient Greek I U 5**

Introduction to the language of the ancient Greek authors and the New Testament.

Au Qtr. 5 cl. Not open to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**102 Elementary Ancient Greek II U 5**

Wi Qtr. 5 cl. Prereq: 101. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**103 Intermediate Ancient Greek I U 5**

Sp Qtr. 5 cl. Prereq: 102. This course is available for EM credit. GEC for lang course.

**104 Intermediate Ancient Greek II U 5**

5 cl. Prereq: 103 or permission of instructor. This course is available for EM credit. GEC for lang course.

**210^ The Greek New Testament U 5**

Wi Qtr. 5 cl. Prereq: 104 or permission of instructor.

**221 Attic Prose U 5**

Au Qtr. 5 cl. Prereq: 104.

**222 Euripides U 5**

Wi Qtr. 5 cl. Prereq: 104 or permission of instructor.

**223^ Homer U 5**

Sp Qtr. 5 cl. Prereq: 104 or permission of instructor.

**224 The Greek Historians U 5**

Sp Qtr. 5 cl. Prereq: 104.

**225^ Sophocles U 5**

5 cl. Prereq: 104 or permission of instructor.

**293 Individual Studies U 1-6**

Intermediate readings in Greek literature.

Su, Au, Wi, Sp Qtrs. Prereq: 104 or equiv or written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**604 Greek Historians U G 5**

Comparative readings from Greek historical writers such as Herodotus, Thucydides, Xenophon, and Plutarch.

2 2-hr cl. Prereq: 2 courses at 200 level. Repeatable to a maximum of 10 cr hrs. With permission of instructor.

**605 Greek Tragedy U G 5**

Readings in the tragedies of Aeschylus, Sophocles, and Euripides.

2 2-hr cl. Prereq: 2 courses at 200 level. Repeatable to a maximum of 10 cr hrs. With permission of instructor.

**607^ Greek Epic U G 5**

Readings from Greek epic, including works of Homer, Hesiod, or Apollonius.

2 2-hr cl. Prereq: 2 courses at 200 level. Repeatable to a maximum of 10 cr hrs. With permission of instructor.

**608 Attic Oratory U G 5**

Comparative readings in Attic orators, including Lysias, Demosthenes, and Aeschines.

2 2-hr cl. Prereq: 2 courses at 200 level. Not open to students with credit for 608.01. Repeatable to a maximum of 10 cr hrs. With permission of instructor.

**609 Readings in Plato U G 5**

5 cl. Prereq: 2 courses at 200 level.

**610 Greek Comedy U G 5**

Comparative readings in Greek comic authors, including Aristophanes and Menander.

2 2-hr cl. Prereq: 2 courses at 200 level. Repeatable to a maximum of 10 cr hrs. With permission of instructor.

**611 Greek Hymn, Lyric, and Elegy U G 5**

Readings in Greek hymns and lyrics, including texts by Hesiod, Sappho, and Pindar.

2 2-hr cl. Prereq: 2 courses at 200 level. Repeatable to a maximum of 10 cr hrs. With permission of instructor.

**612^ Attic Prose Composition U G 5**

Review of elementary syntax leading to composition of sentences and short connected passages; concurrent readings from Lysias or Xenophon.

3 cl, 2 hr arr. Prereq: At least 1 course at 600 level.

**660 Special Topics in Greek Literature U G 5**

Extensive reading from masterpieces of Greek literature; topic varies.

Wi Qtr. 2 2-hr cl. Prereq: Two courses at the 200 level. Repeatable to a maximum of 20 cr hrs.

**693 Individual Studies U G 1-6**

Passages for reading and topics for investigation will be selected to meet the needs of individual students.

Su, Au, Wi, Sp Qtrs. Prereq: 2 courses at 600 level, or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Au, Sp Qtrs. Prereq: 4 courses more advanced than 104, or permission of chairperson. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701^ Survey of Greek Literature: Epic/Archaic Eras U G 5**

A survey of authors representative of the earliest period of Greek literature, with discussion of historical background and methods of criticism.

Au Qtr. 2 2-hr cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 601.

**702^ Survey of Greek Literature: Classical Age U G 5**

A survey of authors representative of the Classical period of Greek literature, with discussion of historical background and methods of criticism.

Wi Qtr. 2 2-hr cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 602.

**703^ Survey of Greek Literature: Hellenistic Era U G 5**

A survey of authors representative of the Hellenistic period of Greek literature, with discussion of historical background and methods of criticism.

Sp Qtr. 2 2-hr cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 603.

**H783 Honors Research U 3-5**

A program of study arranged for each student with individual conferences, reports, and an honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. H783 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 4th yr standing with a grade of A in at least half of the Greek courses taken and with an average of B in the remainder; written permission of instructor under whose supervision the work is to be completed and the ASC Honors Committee; at least 2 qtrs are required of candidates for the degree BA with distinction in Greek. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**802\* Advanced Greek Prose Composition G 5**

Weekly exercises in continuous prose composition with concurrent readings from Greek prose authors.

Wi Qtr. 2 cl. Prereq: 612 or permission of instructor.

**813\* Studies in the Greek Orators G 5**

Selected topics in Greek oratory: Lysias, Andocides, Isocrates, or Demosthenes.

2 cl. Repeatable to a maximum of 15 cr hrs.

**818 Studies in the Greek Historians G 5**

Selected topics in Greek historiography: Herodotus, Thucydides, Xenophon, or Polybius.

2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**836\* Studies in Hellenistic Literature G 5**

Critical study of Greek authors of the third to first centuries B.C.

Repeatable to a maximum of 10 cr hrs.

**840 Studies in Greek Drama G 5**

Critical study of one or more of the Greek dramatists: Aeschylus, Sophocles, Euripides, Aristophanes, and Menander.

2 2-hr cl. Repeatable to a maximum of 20 cr hrs.

**842\* Studies in Greek Lyric and Elegiac Poetry G 5**

Selected topics in the lyric and elegiac poets of the seventh through fifth centuries B.C.

Au Qtr. 1 3-hr cl. Repeatable to a maximum of 15 cr hrs.

**844 Studies in the Greek Philosophers G 5**

Selected topics in Greek philosophy: the pre-Socratics, Plato, Aristotle, and the Hellenistic philosophers.

Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**845 Studies in Greek Epic G 5**

Selected topics in Greek epic: Homer, Hesiod, or Apollonius.

1 3-hr cl. Repeatable to a maximum of 20 cr hrs.

**894 Group Studies G 1-6**

Repeatable to a maximum of 20 cr hrs.

**993 Individual Studies G 1-5**

Assigned readings; supervised individual research.

Su, Au, Wi Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**995 Seminar G 5**

The seminar completes a two-qtr sequence (Au/Wi, Wi/Sp) begun with an 800-level intensive study of an author or a genre, e.g., Aeschylus, Thucydides, Hellenistic poetry.

Wi Qtr. Repeatable to a maximum of 20 cr hrs.

**999 Research G 1-18**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Hausa

486 University Hall, 230 North Oval Mall, 292-3700

**101\* Elementary Hausa I U 5**

Introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.

5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang course. FL Admis Cond course.

**102\* Elementary Hausa II U 5**

Continuation of 101; introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.

5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

**103\* Intermediate Hausa I U 5**

Continuation of 102; introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.

5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

**104\* Intermediate Hausa II U 5**

Continuation of 103; introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.

5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

## Health Information Management and Systems

School of Allied Medical Professions

543 Atwell Hall, 1583 Perry Street, 292-0567

**500 Medical Terminology U 3**

Terminology pertaining to the treatment of disease, including standard abbreviations, anatomic, diagnostic, symptomatic, eponymic, laboratory, pathologic, radiology, anesthetic, operative, and drug terms.

Au, Wi, Sp Qtrs. 3 cl. Not open to student with credit for Alli Med 500.01 and 500.02. Cross-listed in Allied Medicine.

**520 Clinical Documentation, Storage, and Retrieval Systems U 5**

Introduction to content, format, value and use of clinical information and standards of documentation. Survey of identification, storage and retrieval systems and the preservation and retention of data.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: Written permission of instructor.

**525 Organizational Analysis of Health Care Facilities U 3**

Analysis of administration, governing board, medical staff committees, licensing, accrediting and certifying agencies in relation to health care facilities, and health information requirements.

Au Qtr. 3 cl. Prereq: Written permission of instructor.

**535 Clinical Coding Systems U 5**

In depth study of clinical coding systems, particularly ICD-9-CM.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq: 501 or 520 or written permission of instructor.

**540 Health Care Statistics and Data Analysis U 3**

Statistical methods for the collection and computation of health care data with emphasis on epidemiology and data analysis.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 520 or written permission of instructor.

**545 Legal Concepts in Health Care and Information Services U 3**

Legal system, hospital and staff liability, privacy, confidentiality, and legal requirements affecting the control and release of health information and medical records.

Wi Qtr. 3 cl. Prereq: 501 or 520 or written permission of instructor.

**589 Clinical Technical Affiliation U 3**

Practical applications in health information management.

Su, Au, Wi, Sp Qtrs. 1 cl, 1 8-hr clinical study. Prereq: 520 or written permission of instructor. This course is graded S/U.

**620 Classification and Utilization Review Systems in Acute and Managed Care Environments U G 3**

Principles of clinical and reimbursement based classification systems with emphasis on utilization review in acute and managed care environments.

Sp Qtr. 3 cl. Prereq: Enrollment in health information management or written permission of instructor.

**635 Quality Management in Health Care U 4**

History, development and application of quality management including utilization review and outcomes measurement in health care. Survey of tools and techniques.

Au Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: Enrollment in health information management or permissions of instructor.

**640 Management of Health Information Services U 3**

Principles of organizational design and behavior with emphasis on the practical aspects of managing health information services.

Au Qtr. 2 cl, 1 3-hr lab. Prereq: 520 or written permission of instructor.

**645 Management Control Systems for Health Information Services U 3**

Application of work measurement, work standards, physical and financial resource management for health information services.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 520 or written permission of instructor.

**648 Microcomputer Applications in the Health Sciences U G 3**

Overview of microcomputer applications in health sciences with practical applications related to discipline specific needs.

Au, Wi, Sp Qtrs. 22-hr cl. Computer programming neither required nor taught. Cross-listed in Allied Medicine.



**650 Health Care Information Systems U G 3**

Survey of patient, administrative and financial information systems in health care, and the technologies and management practices to support them.  
Sp Qtr. 2 2-hr cl. Cross-listed in Allied Medicine.

**654 Computer-based Health Information Systems, Planning and Analysis U G 3**

Focus on structured systems analysis techniques including database design for health information systems.

Au Qtr. 3 cl. Prereq: 648, Alli Med 650, or written permission of instructor. Cross-listed in Allied Medicine.

**667 Documentation and Information Services in Non-Acute Care U 3**

Study of documentation and information services requirements in cancer registries, long term care, mental health, ambulatory care, and other non-acute care settings.

Wi Qtr. 2 cl. 1 6-hr clinical study. Prereq: 520 or written permission of instructor.

**689 Clinical Management Affiliation U 1-10**

Application of managerial techniques in the organization and administration of health information services.

Su, Au, Wi, Sp Qtrs. 32-40 hrs clinical study wks. Prereq: 589. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**693 Individual Studies U G 1-5**

Problems in health information management not covered in regular course offerings.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**695 Seminar in Health Information Management and Systems U G 1-4**

Selected topics in health information management and systems.

Su, Au, Wi, Sp Qtrs. 1-4 cl. Prereq: Admission to health information management or grad standing. Repeatable to a maximum of 12 cr hrs.

## Health Services Management and Policy

College of Medicine

246 School of Allied Medical Professions Building, 1583 Perry Street, 292-9708

**693 Individual Studies U G 1-5**

Study of individually designed topics not otherwise available in the curriculum.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Group studies of special topics within health services management and policy.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**795 Seminar U G 1-3**

Investigation of current topics of significance to health services management and policy.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**800 Health Care Organization I G 4**

Analysis of arrangements for the organization, financing, and delivery of health care services.

Au Qtr. 2 2-hr cl. Prereq: Written permission of instructor.

**801 Health Care Organization II G 4**

Continuation of 800, with emphasis on managing health services for a defined population.

Sp Qtr. 2 2-hr cl. Prereq: Enrollment in MHA program or written permission of instructor.

**802 Economic Analysis of Health Services G 4**

Applications of microeconomic analysis to the health services industry, with emphasis on the market structure and managerial decisions.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**803 Economics of Health Care I G 4**

Microeconomic principles of consumer demand with applications to health care use; role of uncertainty and health insurance.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in pub hlth or permission of instructor. Not open to students with credit for Pub Hlth 721.

**804 Economics of Health Care II G 4**

Microeconomic principles of supply with applications to the provision of health care services; market place for nurses and physicians; assessment of the competitive model.

Sp Qtr. 2 2-hr cl. Prereq: 721, or grad standing in pub hlth or permission of instructor. Not open to students with credit for Pub Hlth 722.

**805 Introduction to Health Policy G 4**

Introduction to public policy concepts and process as they apply to the organization, financing, and delivery of health services.

Sp Qtr. 2 2-hr cl.

**811 Legal Environment of Health Care G 4**

Law as it affects health care, including malpractice, licensure, professional and business relationships, and legal-ethical decisions.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**815 Health Services Organizational Management G 4**

Principles of organizational behavior and management applied to health services organizations; emphasis on professionalism, leadership, and unique problems of health care settings.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**816^ Human Resource Management in Health Care G 4**

Human resource management principles and applications in the health care setting, including interviewing, selection, training, conflict resolution, performance evaluation, and labor-management relations.

Sp Qtr. 2 2-hr cl. Prereq: 815 or BUS-MHR 806 or equiv.

**820 Health Services Finance I G 4**

Principles of finance and accounting applied to health service organizations.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**821 Health Services Finance II G 4**

Continuation of 820 emphasizing financial analysis, financial planning, and management control.

Sp Qtr. 2 2-hr cl. Prereq: 820 or permission of instructor.

**822 Health Services Financial Decision-Making G 4**

Principles of financial decision-making in health service organizations, with emphasis on applications of decision support systems.

Au Qtr. 2 2-hr cl. Prereq: 821 or permission of instructor.

**823 Financial Management of Public Health Programs G 4**

Principles of accounting and finance applied to the management of public health agencies and programs.

Sp Qtr. 2 2-hr cl. Prereq: Enrollment in MPH program and 802 or permission of instructor.

**824 Economic Evaluation of Health Care Programs and Services G 4**

Overview and appraisal of the state-of-the art in the evaluation of health care programs and services.

Sp Qtr. 2 2-hr cl. Cross-listed in Pharmacy.

**830 Forecasting Methods in Health Services Administration G 4**

Forecasting methods, with special emphasis on topics useful in health services administration, including service area determination, population forecasting, and non-historical methods.

Sp Qtr. 2 2-hr cl. Prereq: 6 cr hr of stat or permission of instructor.

**831 Strategic Management and Program Development G 4**

Techniques and methods for strategic management and project planning in health care organizations and settings.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**840 Long-Term Care Policy G 4**

Health policies in the areas of aging and disability, especially from historical and political perspectives; institutional care, independent living, assisted living, medicare and medicaid.

Wi Qtr. 2 2-hr cl.

**841 Long-Term Care Management G 4**

Management analysis of long-term health care services for older adults and others requiring specialized services; continuum of long-term care, emphasizing institutional settings.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**845 Managed Health Care Programs G 3**

Analysis of the organization, financing, and operation of managed health care programs.

Sp Qtr. 1 3-hr cl. Prereq: 800 or 801 or Permission of instructor.

**850 Seminar in Health Service Management and Policy G 2-4**

Small group seminar with focus on integrative projects in health services management and policy.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in MHA or permission of instructor. Repeatable to a maximum of 4 cr hrs.

**855^ Health Care Policy and Politics G 3**

Political characteristics of the policies and mechanisms for the provision of personal health services, with emphasis on community, state, and federal levels of policy-making.

Au Qtr. 1 3-hr cl.

**860^ Evaluation G 4**

Models of evaluation, including experimental designs, quasi-designs, and case studies with discussion of barriers to effective use of evaluation results in decision-making.

Wi Qtr. 3 1.5-hr cl. Prereq: Grad level course in stat or permission of instructor.

**861^ Managerial Decision Approaches G 4**

Decisions as made by individuals, groups, and organizations comprising the health delivery system; examination of decision-maker behavior; strategies to improve decisions.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**870.01 General G 2-4**

Repeatable to a maximum of 14 cr hrs.

**870.02 Clinical Rotations G 2-4**

Repeatable to a maximum of 14 cr hrs.

**870.03 Data Analysis G 2-4**

Repeatable to a maximum of 14 cr hrs.

**870.04 Ethics G 2-4**

Repeatable to a maximum of 14 cr hrs.

**870.05 Human Resources G 2-4**

Repeatable to a maximum of 14 cr hrs.

**870.06 Marketing G 2-4**

Repeatable to a maximum of 14 cr hrs.

**870.07 Quantitative Methods G 2-4**

Repeatable to a maximum of 14 cr hrs.

**880 Operations Management for Health Service Organizations G 4**

Concepts and techniques for managing operations in health service organizations; emphasis on management perspective and decision-making.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**881 Topics in Health Services Operations Management G 4**

Selected topics in health services operations management, such as operations strategy, quality management, process design, materials management, and facility location.

Sp Qtr. Prereq: 880 or permission of instructor.

**882 Information Systems for Health Services Organizations G 4**

Information systems concepts, issues, and challenges for health services organizations; managerial analysis of information and information technology as organizational assets.

Au Qtr. 2 2-hr cl. Prereq: 880 or permission of instructor.

**900 Advanced Topics in Health Services Management and Policy G 2-4**

Seminar on issues and methods of inquiry in health services management and policy.

Au Qtr. Arr. Prereq: Enrollment in PhD in public health or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**998 Thesis Research G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable. This course is graded S/U.

## Hebrew

203 Botany and Zoology Building, 1735 Neil Avenue, 292-9255

**101 Elementary Hebrew I U 5**

Conversation, reading, writing, vocabulary building, phonetics, and grammar.

Su, Au, Wi, Sp Qtrs. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**102 Elementary Hebrew II U 5**

Reading of modified passages from modern Hebrew literature supplemented with additional study of grammar.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**103 Intermediate Hebrew I U 5**

Reading of passages from various periods of Hebrew literature; review of salient points of elementary grammar and introduction to elements of classical Hebrew.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

**104 Intermediate Hebrew II U 5**

Reading of modern Hebrew short stories, poems, and essays; special emphasis on oral practice and Hebrew idioms.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

**205 Modern Hebrew Grammar, Conversation, and Composition U 5**

Development of communication skills in Modern Hebrew; special emphasis on using new grammatical skills in advanced forms of composition and conversation.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 104 or permission of instructor. Not open to native speakers through regular course enrollment or EM credit.

**216 The Medieval Jewish Experience U 5**

A survey of ten centuries of medieval Jewish culture from the rise of Islam to the death of Shabbetai Zvi, the false Messiah (1676).

Wi Qtr. 2 2-hr cl. Not open to students with credit for Medieval 216. Cross-listed in Medieval and Renaissance Studies. GEC arts and hums cultures and ideas course.

**241 Culture of Contemporary Israel U 5**

Introduction to the culture of modern Israel: historical roots, socio-political institutions and developments, and literary and artistic creations reflecting the realities of contemporary Israeli society.

Su, Au, Wi, Sp Qtrs. 5 cl. H241 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums cultures and ideas course.

**293 Individual Studies U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**294 Group Studies U 1-15**

Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

**370 Biblical and Post-Biblical Hebrew Literature in Translation U 5**

Reading and analysis of selected chapters from the Hebrew scriptures and post-biblical Hebrew writings representative of major historical, cultural, and literary trends.

Su, Au, Wi, Sp Qtrs. 5 cl. H370 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for 273. GEC arts and hums lit course.

**371^ Medieval Hebrew Literature in Translation U 3**

Post-biblical and medieval Hebrew literature from the Near East, North Africa, and Europe.

Sp Qtr. 3 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 272.

**372 Modern Hebrew Literature in Translation U 5**

Modern Hebrew literature; works of major writers from the middle of the 18th century to the present; emphasis on European literary influences.

Sp Qtr. 2 2-hr cl. H372 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 372: English 110 or equiv. Prereq for H372: English H110 or equiv. Not open to students with credit for 271. GEC arts and hums lit course.

**373 Prophecy in the Bible and Post-Biblical Literature U 5**

The dynamics of Israelite prophecy and apocalyptic in the context of ancient Near Eastern culture.

Au Qtr. 5 cl. Prereq: 273. GEC arts and hums lit course.

**374 Women in Biblical and Post-Biblical Literature U 5**

An examination of the social, legal, and religious position of women as they appear in the Hebrew scriptures and Rabbinic writings.

Au, Wi, Sp Qtrs. 3 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 274. Taught in English. GEC arts and hums lit course.

**376 The Jewish Mystical Tradition U 5**

The history of Jewish mysticism from antiquity to the present, with emphasis on its implications for the comparative study of religious experience.

Au, Wi, Sp Qtrs. 2 2-hr cl. H376 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Rel Stds 376. Cross-listed in Religious Studies. GEC arts and hums cultures and ideas course.

**378 Biblical and Post-Biblical Wisdom Literature U 5**

An examination of the various ideas, themes, attitudes, implications, and genres of biblical and post-biblical wisdom literature.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: English 110 or 111 or equiv. GEC arts and hums lit course.

**401 Review of Grammar and Composition U 5**

Review of Hebrew grammar; composition on assigned topics and some practice in translation.

Wi Qtr. 5 cl. Prereq: 104.

**402 Intermediate Hebrew Conversation and Composition U 5**

Vocabulary building, practice in speaking Hebrew, conversation and composition dealing with social and everyday aspects of Israeli life.

Sp Qtr. 5 cl. Prereq: 104 or permission of instructor.

**403^ Hebrew Syntax U 3**

Parts of speech, types of sentences, word order, and syntactic analysis.

Au Qtr. 3 cl. Prereq: 104 or permission of instructor.

**421 Modern Hebrew Short Story U 5**

Reading and discussion of masterpieces of modern Hebrew short stories in the 19th and 20th centuries.

Au Qtr. 5 cl. Prereq: 104 or permission of instructor.

**422 Modern Hebrew Poetry U 5**

Reading and discussion of masterpieces of modern Hebrew poetry in the 19th and 20th centuries.

Sp Qtr. 2 2-hr cl. Prereq: 104 or permission of instructor.

**425 Readings in the Mishnah U 5**

Reading and discussion of the ideas and teachings of the Mishnah as they are reflected in the unique Mishnaic language.

Wi Qtr. 2 2-hr cl. Prereq: 104 or permission of instructor.

**601^ Biblical Hebrew Grammar U G 5**

Introduction to the phonology, morphology, and syntax of the Biblical Hebrew idiom.

Au Qtr. 5 cl. Prereq: 104 or permission of instructor.

**604^ Hebrew Phonetics and Vocalization U G 3**

Rules of Hebrew phonetics and vocalization; lectures and abundant practical exercises.

Au Qtr. 3 cl. Prereq: 104 or permission of instructor.

**605^ Hebrew Morphology U G 5**

The morphological system of Hebrew; the interrelations between roots and forms.

Wi Qtr. 5 cl. Prereq: 604 or permission of instructor.

**611^ History of the Hebrew Language U G 5**

Genealogical and typological relations within the Semitic family, a survey of Biblical, Mishnaic, and modern Hebrew.

Au Qtr. 2 2-hr cl. Prereq: 104 or permission of instructor. GEC third writing course.

**620 Introduction to Hebrew Literary and Cultural Texts U G 5**

Literary and cultural Hebrew texts from the biblical to the modern period; students will develop the ability to read critically and to build analytical vocabulary.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 205 or permission of instructor.

**621^ The Bible as Literature: Selected Readings U G 5**

Critical study of basic issues in the language and analysis of biblical texts.

Sp Qtr. 2 2-hr cl. Prereq: 421 or 422 or 423. Repeatable to a maximum of 20 cr hrs.

**623 Readings in Rabbinic Literature U G 5**

Study of selected texts and issues in Rabbinic literature, and discussions of the methods by which they are studied.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**671 The Problem of Evil in Biblical and Post-Biblical Literature U G 5**

Study of the vexing problem of evil; the seeming contradiction between tradition and experience; extensive readings and discussions of appropriate biblical and post-biblical materials.

Wi Qtr. 4-5 cl. Prereq: 273 or 274 or equiv or permission of instructor. Given in English, but grad students and undergrad Hebrew majors will read the texts in the original Hebrew.

**680 Basic Bibliographic and Reference Tools in Hebraica, Judaica, and Semitics U G 5**

A survey of tools which may be used in doing research at all levels in the study of Hebraica, Judaica, and Semitics.

Au, Wi, Sp Qtrs. 2 2-hr cl.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**721 Studies in Hebrew Poetry U G 5**

Advanced study of specific poetic periods, figures, and/or topics involving extensive readings and discussions of appropriate primary and secondary materials.

Su, Au, Wi, Sp Qtrs. 2 2-5-hr cl. Prereq: 10 hrs of Hebrew at the 400 level and above, or equiv. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

Offers students with special aptitudes a greater opportunity to do independent study than is possible in the ordinary course; work in conference, library, or phonetics laboratory.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the Hebrew courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**801^ Teaching Hebrew at the College Level G 5**

Methods and techniques for teaching Hebrew at the college level.

Au Qtr. 2 wk intensive workshop followed by 1 2-hr wkly cl. Prereq: Teaching assoc in NELC or permission of instructor. For students enrolled in this course, the minimum number of hrs required for graduation is increased by 5 cr hrs.

**811 Seminar in Hebrew Studies G 5**

Intensive investigation of a selected topic or problem in Hebrew linguistics, philology, literature, or literary culture.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**998 Research in Hebrew G 1-25**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## History

106 Dulles Hall, 230 West 17th Avenue, 292-2674

General Prerequisites for Courses Numbered 300

Unless otherwise indicated, the prerequisite for 300-level courses is credit for one 10-hr GEC Historical Survey sequence or permission of the instructor.

General Prerequisites for Courses Numbered 500

Unless otherwise indicated, the prerequisites for 500-level courses are credit for one 10-hr GEC Historical Survey sequence and junior or senior standing or permission of instructor. 500-level courses may provide graduate credit only in departments other than History.

General Prerequisites for Courses Numbered 700 and 800

Unless otherwise indicated, the prerequisites for 700- and 800-level courses are graduate standing or permission of instructor.

**111 Western Civilization: Antiquity to the Seventeenth Century U 5**

Ancient civilizations (Near East, Greece, Rome); barbarian invasions; medieval civilizations (Byzantium, Islam, Europe); Renaissance and Reformation.

H111 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq or concur: English 110 or 111. Not open to students with credit for 100.01. This course is available for EM credit. GEC historical survey course. SS Admis Cond course.

**112 Western Civilization: Seventeenth Century through Modern Times U 5**

Political, scientific, and industrial revolutions; nationalism; the two world wars; decline of empires; the cold war.

H112 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 111 and prereq or concur: English 110 or 111. Not open to students with credit for 100.02 or 100.03. This course is available for EM credit. GEC historical survey course. SS Admis Cond course.

**121 African Civilizations to 1870 U 5**

Exploration of the political, social, and economic history of precolonial African civilizations, using a variety of interdisciplinary approaches and materials.

Prereq: English 110 or 111 or equiv. Not open to students with credit for AfAm&AST 121. Cross-listed in African-American and African Studies. GEC historical survey course.

**122 African Civilizations, 1870 to the Present U 5**

Exploration of the political, social, and economic history of the colonial and independent African countries, using a variety of interdisciplinary approaches and materials.

Prereq: 121 or AfAm&AST 121 or Black St 121. Not open to students with credit for AfAm&AST 122. Cross-listed in African-American and African Studies. GEC historical survey course.

**131 Comparative Asian Civilizations I U 5**

Comparative survey of development of Asian civilizations, Neolithic Age to 1500; includes ancient Near East, India, China, Japan; rise of Islam, Buddhism, Hinduism; Mongol domination.

Wi Qtr. 4 cl. H131 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq or concur: English 110 or 111. Not open to students with credit for 140.01 or 140.02 or 140.03. GEC historical survey course. SS Admis Cond course.

**132 Comparative Asian Civilizations II U 5**

Comparative survey of Asian civilizations, 1500 to modern era; includes age of great dynasties (Ottoman, Safavid, Mughal, Ming, Ch'ing, Tokugawa); imperialism; nationalism; independence.

Sp Qtr. 4 cl. H132 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 131 and prereq or concur: English 110 or 111. Not open to students with credit for 140.01 or 140.02 or 140.03. GEC historical survey course. SS Admis Cond course.

**151 American Civilization to 1877 U 5**

The political, constitutional, social, and economic development of the United States from the colonial period through the era of Reconstruction.

H151 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq or concur: English 110 or 111. Not open to students with credit for 150.01. This course is available for EM credit. GEC historical survey course. SS Admis Cond course.

**152 American Civilization since 1877 U 5**

The political, constitutional, social, and economic development of the United States from the era of Reconstruction to the present.

H152 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 151 and prereq or concur: English 110 or 111. Not open to students with credit for 150.02. This course is available for EM credit. GEC historical survey course. SS Admis Cond course.

**171 Latin American Civilizations to 1825 U 5**

Latin American political, social, economic, and cultural history from Pre-Columbian times to independence (1825) focussing on imperialism, religion, minorities, war, and rebellion.

2-2-hr cl. H171 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq or concur: English 110 or 111. Not open to students with credit for 150.03 or 161. GEC historical survey course.

**172 Latin American Civilizations since 1825 U 5**

Latin American political, social, economic, and cultural history from independence (1825) to the present focussing on neo-colonialism, instability, underdevelopment, militarism, and minorities.

2-2-hr cl. H172 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 151 and 152, or 171; and prereq or concur: English 110 or 111. Not open to students with credit for 150.03 or 161 or 240. GEC historical survey course.

**181 World History to 1500 U 5**

History of the human community to 1500, primary emphasis on history of civilizations, and secondary emphasis on patterns of regional and hemispheric integration.

Prereq: English 110 or 111 or permission of instructor. Not open to students with credit for 200.01. GEC historical survey course.

**182 World History, 1500 to Present U 5**

History of the human community from 1500 to the present, primary emphasis on processes of global integration, and secondary emphasis on comparative civilization.

Prereq: 181 or 200.01, and prereq or concur: English 110 or 111. Not open to students with credit for 200.02. GEC historical survey course.

**301 Introduction to Ancient Mediterranean Civilizations U 5**

Comparative historical analysis of ancient Mediterranean civilizations: emphasis on Greek and Roman societies, urbanism, empires, literature, arts; from the Bronze Age to Fall of Rome.

Not open to students with credit for 110.01 or 201. SS Admis Cond course.

**306 Classical Archaeology U 5**

Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites.

Not open to students with credit for 240, Classics 240, or Hist Art 240. Cross-listed in Classics and History of Art as 240. GEC arts and hums cultures and ideas course.

**307 World War II U 5**

Survey of the causes, conduct and consequences of the Second World War. Not open to students with credit for 281. SS Admis Cond course.

**308 The Vietnam War U 5**

An examination of the causes, conduct, and effects of the revolutionary war in Vietnam from 1945 to 1975.

Not open to students with credit for 282.

**310 History of Ohio U 5**

A general survey of state history-social, economic, religious, and political-from the Indian period to the present time.

Not open to students with credit for 683.

**312 Introduction to Modern Europe U 5**

Examination of selected major themes in European history from the French Revolution to the present.

**323 History of African-Americans**

2-2-hr cl. Cross-listed in African-American and African Studies.

**323.01 History of African-Americans in the Age of Slavery U 5**

Origins of modern slavery; its development in the US: the evolution of African-American life and culture from 1619 to the end of the Civil War.

Not open to students with credit for 223 or 260; or AfAm&AST 223, 323.01, or 345.

**323.02 History of African-Americans from Emancipation to the Present U 5**

The rise of debt peonage among blacks; the formation of the northern ghetto; the Civil Rights Movement and beyond.

Not open to students with credit for 224 or 260; or AfAm&AST 224, 238, 323.02, or 345.

**325 Introduction to Women's History: The American Experience U 5**

American women from pre-European-settlement to the present; experiences of Native American, African American, Mexican American, Puerto Rican, Asian American, Jewish, Appalachian, working-class; and lesbian women.

H325 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 237. SS Admis Cond course. GEC social diversity course.

**330 Introduction to Jewish Civilization****330.01 Ancient and Medieval Jewish Civilization U 5**

Jewry and Judaism from remote antiquity to the 15th century A.D.

Not open to students with credit for 251. SS Admis Cond course. GEC arts and hums, cultures and ideas course.

**330.02 Modern Jewish Civilization U 5**

Jewry and Judaism from the 15th century to the present.

Not open to students with credit for 252. SS Admis Cond course.

**331 The Holocaust U 5**

The historical background of the holocaust; dimensions of destruction; world response; post war trials; moral and philosophical issues.

Not open to students with credit for 254. SS Admis Cond course.

**332 Jews in American Film U 5**

A study of how modern Jews appear in film compared with historical reality.

2-2-hr cl.

**336 Introduction to Russian Civilization U 5**

A survey of Russian civilization from earliest times to 1917; geography, peoples, culture, social, political, and religious institutions, and the impact of Westernization.

Not open to students with credit for 220. SS Admis Cond course.

**340 Islam, Politics, and Society in History U 5**

Elaboration of prophetic message of Islam into governing principles of Islamic polity and society; evolution of these principles over the centuries.

Not open to students with credit for 258. SS Admis Cond course.

**344 Introduction to Contemporary China U 5**

Origins of the Chinese revolution and the rise of Mao; problems of political integration, economic growth, and social transformation.

Not open to students with credit for 268. SS Admis Cond course.

**345 History of East Asia****345.01 History of East Asia to 1800 U 5**

East Asian history from the earliest times to 1800: Confucianism, Buddhism, Shinto; Chinese culture and its spread to Japan; the growth of indigenous Japanese culture.

Not open to students with credit for 265. SS Admis Cond course.

**345.02 History of East Asia since 1800 U 5**

Political, economic, cultural, and ideological change in East Asia; interregional and international relations; the feudal legacy, nationalism, and communism.

Not open to students with credit for 266. SS Admis Cond course.

**346 Introduction to Asian American History U 5**

A survey of the Asian American experience in the United States, from the mid-19th century to the present.

GEC arts and hums cultures and ideas, and social diversity course.

**350 History of Modern Africa U 5**

General survey of political, economic, and social developments in colonial and post-independence Africa.

Prereq: One 10-hr GEC historical survey sequence or permission of instructor. Not open to students with credit for AfAm&ASt 350. Cross-listed in African-American and African Studies.

**360 Scientific Revolutions in Their Social Context U 5**

Models of scientific innovation and study of selected examples of the great scientific revolutions: Copernican, Chemical, Darwinian, Quantum, Genetic, and others.

Not open to students with credit for 233. SS Admis Cond course.

**366 Environmental Issues in International and Historical Perspective U 5**

International overview of the evolution of environmental problems and of the rationales and movements for protecting the environment, with concentration on the 19th and 20th centuries.

Not open to students with credit for 236.

**375 History of American Criminal Justice U 5**

History of crime, criminal law, law enforcement agencies, prisons, and juvenile courts.

Not open to students with credit for 286. SS Admis Cond course.

**380 The History of War U 5**

A survey of the main concepts and issues involved in the study of war in world perspective using case studies from prehistoric times to the present.

**387 Introduction to Business History: The American Experience U 5**

Study of the evolution of "American capitalism" from pre-capitalist economies of the medieval period to the end of the 20th century.

Not open to students with credit for 564.

**394 Group Studies U 5**

Groups of students are given an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 or hrs.

**398 Introduction to Historical Thought U 5**

Investigation of the methods historians use to understand the past.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H398 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 302. Some classes will visit the Ohio Historical Society. A minimum grade of C in 398 is required for admission to the history major.

**H399 Introduction to Historical Research U 5**

Research strategies and techniques; topics will vary.

Prereq: 302 or 398 or permission of instructor.

**500 The Ancient Near East U G 5**

The ancient history of Mesopotamia, Egypt, Anatolia, Persia, Israel, and the Levant to the establishment of the Persian Empire; readings from sources in translation.

Not open to students with credit for 600.

**501 Greek History****501.01 History of Archaic Greece U G 5**

History of Greece from the early Stone Age communities to the end of the Greek-Persian conflicts, 479 B.C.; readings in the sources in translation.

Not open to students with credit for 601.01.

**501.02 History of Classical Greece U G 5**

History of classical Greece from the foundation of the Delian Confederacy to the death of Alexander III; reading in the sources in translation.

Not open to students with credit for 601.02.

**501.03 History of the Eastern Mediterranean during the Bronze Age U G 5**

Studies in the civilizations of Minoan Crete and Helladic/Mycenaean Greece in relationship with the Trojans, Hittites, Philistines, Cypriotes, Syrians, and Egyptians.

Not open to students with credit for 601.03.

**502 Hellenistic Near East U G 5**

The cultural history of the Achaemenid and Hellenistic kingdoms from c. 600 to 31 B.C., with emphasis upon Greek and Persian interaction in the Near East.

Not open to students with credit for 602.

**503 Roman History****503.01 Roman Republic U G 5**

A history of Rome from the founding to the fall of the Roman Republic; readings in ancient sources in translation.

Not open to students with credit for 603.01.

**503.02 Early Roman Empire, 31 B.C.-A.D. 180 U G 5**

The Roman Empire at its height; internal politics, imperial administration, and religion; readings from sources in translation.

Not open to students with credit for 603.02.

**503.03 Later Roman Empire, A.D. 180-476 U G 5**

Decline and fall of the Empire in the West; military, social, economic problems; religious conflicts; emergence of Germanic kingdoms; readings from sources in translation.

Not open to students with credit for 603.03.

**504 The Ancient Mediterranean World****504.01 War in the Ancient Mediterranean World U G 5**

An advanced survey of military history from the late Bronze Age to the fall of the Roman Empire in the West.

2 2-hr cl. Not open to students with credit for 604.01.

**504.02 The Ancient Mediterranean City U G 5**

Cities in the ancient Near East, Greece, and Rome, with an emphasis on their physical form and historical importance.

Not open to students with credit for 510 or 604.02.

**505 Byzantine History****505.01 Early Byzantine Empire U G 5**

History of Byzantium, A.D. 330-843, with emphasis on internal political and religious developments and the relationship between Byzantium and its neighbors.

Not open to students with credit for 607.01.

**505.02 Later Byzantine Empire U G 5**

History of Byzantium, A.D. 843-1453, with emphasis on internal developments, the Crusades, the Fall of the City, and the legacy of Byzantium.

Not open to students with credit for 607.02.

**506 History of Early Christianity U G 5**

Christian origins and expansion to 600 A.D.; conflict with Roman Empire; internal dissent; basic institutions; Christian intellectuals; the imperial established church; monasticism; papacy; the barbarians and Christianity.

Not open to students with credit for 570.

**507 History of Medieval Christianity U G 5**

The late ancient and early medieval church; the papacy and the Carolingians; the Cluniac reform; the new monasticism; heresy; the problems of late medieval Christianity.

Not open to students with credit for 571.

**508 Medieval Europe****508.01 Medieval Europe I: 300-1100 U G 5**

Europe 300-1100; Roman decline, Christianization of Europe, barbarian invasions; Carolingian renaissance; early feudalism and manorialism; investiture contest; crusades; economic and intellectual revival.

Not open to students with credit for 606.04.

**508.02 Medieval Europe II: 1100-1450 U G 5**

Europe 1100-1500; the 12th-century Renaissance; classical feudalism; rise of Christendom; the great economic revival; universities and scholasticism; religious dissent; and 14th-century crises.

Not open to students with credit for 510 or 606.05.

**508.03 Medieval England U G 5**

England from the Roman conquest to 1485; Anglo-Saxon society and institutions; the Norman conquest; law and Parliament; social, intellectual, and economic growth of the English people.

Not open to students with credit for 630.

**509 Italian Renaissance**

The literary, artistic, and intellectual achievements primarily of Renaissance Italy against the background of economic, political, and social developments in western Europe.

**509.01 1400s, Communal Age to Quattrocento U G 5**

Beginnings and flourishing of the Italian Renaissance, from the era of independent communes to the quattrocento.

Au Qtr. Not open to students with credit for 609.

**509.02 High Renaissance and Beyond U G 5**

Climax of the Italian Renaissance in the era of Michelangelo and Machiavelli, and its eventual decline during the sixteenth century.

Prereq: 10 cr hrs of history.

**511 The Reformation U G 5**

The rise and growth of Protestantism and the Catholic Reformation of the 16th century against the background of economic, political, and social developments in western Europe.

Not open to students with credit for 610.

**512 European History****512.01 Early Modern Europe, 1600-1775 U G 5**

A study of the rise of the absolute state, the changing diplomatic alignments, and the Enlightenment.

Not open to students with credit for 612.

**512.02 French Revolution and Napoleon U G 5**

The background of the Revolution; the social bases and political schisms of the first three Revolutionary governments, 1789-1795; the program and role of Napoleon.

Not open to students with credit for 613.

**512.03 Europe, 1815-1900 U G 5**

Nationalism, the democratic movement, economic growth, imperialism, and cultural advance from the Congress of Vienna to World War I.

Not open to students with credit for 614.

**512.04 Europe 1900-1950 U G 5**

The important events and issues in European history from 1900-1950. Wi Qtr. 2 2-hr cl.

**512.05 Europe since 1950 U G 5**

Europe since the disaster of the Second World War; recovery, decolonization, integration, creation of a new society, and search for identity.

Not open to students with credit for 634.

**513 European Intellectual and Cultural History**

2 2-hr cl. Cross-listed in Comparative Studies in the Humanities.

**513.01 The Age of Modernity in the 19th Century U G 5**

Intellectual and cultural history in Europe in the 19th century with emphasis on historic events which marked the formation of historical consciousness in the 19th century.

Not open to students with credit for 622.01, or Comp Std 513.01 or 622.01.

**513.02 The Age of Modernity in the 20th Century U G 5**

Intellectual and cultural history in Europe in the 20th century with emphasis on historic events which marked the formation of historical consciousness in the 20th century.

Not open to students with credit for 622.02, or Comp Std 513.02 or 622.02.

**514 English History****514.01 Tudor and Stuart Britain, 1500-1700 U G 5**

The religious, political, economic, imperial, and intellectual development of the English people from 1485 to 1714, with special attention to the constitutional struggles of the 17th century.

Not open to students with credit for 631.

**514.02 England in the 18th and 19th Centuries U G 5**

The course of political, social, and intellectual change, of industrial and commercial growth in Hanoverian and Victorian England.

Not open to students with credit for 632.

**514.03 England in the 20th Century U G 5**

A study of Britain since 1900 with special emphasis on the rise of the Labour party and the development of the social welfare state.

Not open to students with credit for 633.

**515 French History****515.01 France, 1815-1914 U G 5**

France's transformation from a rural, traditional society to a modern, industrial society, and the relation of this transformation to 19th-century political and intellectual movements.

Not open to students with credit for 615.

**515.02 France in the 20th Century U G 5**

The impact on France of two world wars, the depression and decolonization, with emphasis on the breakdown of the political system and the emergence of a new society from the wreckage of the old.

Not open to students with credit for 616.

**516 Modern Italy, 1848-Present U G 5**

Introduction to the history of Italy from the Risorgimento to the present. 2 2-hr cl.

**517 Modern Greece U G 5**

Greece from 1453 to the present; Turkish rule, War of Independence, emergence of the modern state; focus on political, social, and cultural developments.

Not open to students with credit for 529.

**518 German History****518.01 Germany in the 19th Century U G 5**

Political, social, economic, and cultural developments from the Prussian reform movement to World War I, with emphasis on German unification and the origins of the war.

Not open to students with credit for 618.01.

**518.02 Germany in the 20th Century U G 5**

World War I; the Weimar period; Hitler and the Third Reich; and the two Germanies after 1945.

Not open to students with credit for 618.02.

**519 East Central Europe****519.01 Habsburg Monarchy and the Polish Lands, 1740-1918 U G 5**

A century and a half of Habsburg history with emphasis on Austria's responses to Enlightenment ideas, the French Revolution, social change, industrialization, and emerging nationalisms.

Not open to students with credit for 626.01.

**519.02 East Central Europe since 1919 U G 5**

Advanced survey of East European history from World War I to the post-communist era.

Not open to students with credit for 626.03.

**519.03 Balkans from the Ottoman Conquest until World War I U G 5**

An historical survey of southeast European history from the Battle of Kosovo; the assassination of Archduke Franz-Ferdinand; political, social, economic, and cultural development; emphasis on Balkan peoples.

Not open to students with credit for 626.02.

**523 Women in the Western World: Ancient Civilization to the Industrial Revolution U G 5**

Women and the economic, social, and political factors responsible for their status in society.

**524 Women in the Western World: The Industrial Revolution to the Present U G 5**

A continuation of 523.

**525 Topics in Women's History U G 5**

In-depth analysis of selected topics in American, European, and/or Third World women's history; topic varies by quarter.

Repeatable to a maximum of 15 cr hrs.

**526 Historical Perspectives on Sexuality: Same Sex Sexuality in the Western World U G 5**

History of same-sex love and sexuality from ancient times to the present. Not open to students with credit for 620.

**527 History of the Family U G 5**

Evolution of the family, primarily in Europe and the United States, with attention to minorities and cross-cultural comparisons.

Not open to students with credit for 677.

**530 Jewish History****530.01 History of Ancient Israel U G 5**

The rise of the Jewish nation and religion in the Ancient Near East; settlement in Canaan; the Israelite and Judean monarchies until their conquest by Assyria and Babylonia.

Not open to students with credit for 605.06.

**530.02 Second Commonwealth U G 5**

The restoration of Jewish statehood following the first Babylonian Exile and the history of Palestinian Jewry and of the Jewish Diaspora down to the 2nd Century A.D.

Not open to students with credit for 605.01.

**530.03 Jews in the Western World in Modern Times U G 5**

Changing patterns of Jewish life since the Jews' struggle for Emancipation; migration movements and the shift of Jewish centers in Europe and the New World.

2 2-hr cl. Not open to students with credit for 605.04.

**530.04 The American Jewish Experience U 5**

The history of America's Jewish population and American Jewry's interaction with the world in which they lived.

2 2-hr cl.

**531 Topics In Jewish History****531.01 Messiahs and Messianism in Jewish History U G 5**

The history of Jewish messianic idea and of Jewish messianic leadership from ancient to modern times.

Not open to students with credit for 605.10.

**531.02 Jews in the World of the Renaissance U 5**

An investigation of Jewish life and thought in the Christian and Muslim worlds during the Renaissance.

2 2-hr cl.

**531.03 Jews in the Baroque World U 5**

An investigation of Jewish life and thought in the Christian and Muslim worlds during the Baroque era.

2 2-hr cl.

**532 History of Spain, 1469-Present U G 5**

Unification of the thrones; the rise and fall of empire; rivalry with Portugal; Napoleon to the Civil War; Franco and the Post-Franco Era.

Not open to students with credit for 650.

**533 Latin American History****533.01 Colonial Latin American History U G 5**

Mayan, Aztec, and Incan Empires; the Spanish and Portuguese conquests and the transplanting of Iberian institutions; the Baroque period; the Bourbon Century and the Enlightenment.

Not open to students with credit for 651.01.

**533.02 South America since Independence U G 5**

Nation-building in the South American republics during the 19th and 20th centuries with special emphasis on Argentina and Brazil.

Not open to students with credit for 651.02.

**533.03 Central America and the Caribbean since Independence U G 5**

Political, economic, and cultural history of West Indies (Cuba, Haiti, Dominican Republic, etc.) and Central America (Panama, Guatemala, Nicaragua, etc.) and relations with United States.

Not open to students with credit for 651.03.

**533.04 History of Brazil U G 5**

History of Brazil during colonial and independence periods with major emphasis on the 19th and 20th centuries.

Not open to students with credit for 651.06.

**533.05 History of Mexico U G 5**

History of Mexico during precolonial, colonial, and independence periods with emphasis on the 19th and 20th centuries.

Not open to students with credit for 651.07.

**536 History of Russia to 1725 U G 5**

A survey from the origins of the Russian state to the end of the reign of Peter the Great.

Not open to students with credit for 635.

**537 History of Russia****537.01 Imperial Russia, 1725-1914 U G 5**

A survey from the end of the reign of Peter the Great to the outbreak of World War I.

Not open to students with credit for 636.

**537.02 Revolutionary Russia, 1860-1917 U G 5**

The revolutions of 1905 and 1917 from the standpoint of the revolutionary movements of the 19th century and changing social and political forces.

Not open to students with credit for 628.

**538 History of the Soviet Union U G 5**

Beginning with the background and events of the revolution of 1917, analysis of developments in Russian history from World War I to the present.

Not open to students with credit for 637.

**540 Core Regions of Islamic Worlds****540.01 Islamic Society, 610-1258 U G 5**

Origins and early development of selected fundamental Islamic institutions in their historical and cultural context.

Not open to students with credit for 641.

**540.02 History of Iran U G 5**

A history of Iran in the Islamic period, focusing on nomadic-urban interaction and Iranian culture.

2 2-hr cl.

**540.03 Ottoman Empire, 1300-1800 U G 5**

The Ottoman Empire from frontier warrior band to world power to "Sick Man of Europe"; factors in upsurge and decline; cultural interaction with the West.

Prereq: Prior course work on Middle Eastern history or Islamic culture is strongly recommended. Not open to students with credit for 642.

**540.04 Middle East in the 19th Century U G 5**

Modernization of the Middle East, from the early autocratic modernizers to the 19th century; economic, social, political, and intellectual transformations; modern Middle East in world perspective.

Prereq: Prior course work on Middle Eastern history or Islamic culture is strongly recommended. Not open to students with credit for 644.

**540.05 Middle East in the 20th Century U G 5**

Modernization of the Middle East in the 20th century.

Prereq: Prior course work on Middle Eastern history or Islamic culture is strongly recommended. Not open to students with credit for 644.

**541 Wider Islamic World****541.01 Islamic Spain and North Africa U G 5**

Major problems in history and culture of Islamic Spain (712-1492) and North Africa (641-present), including Egypt; special emphasis on nomadism and revivalism.

Not open to students with credit for 640.

**541.02 History of Islam in Africa U G 5**

Examination of the history and spread of Islam in Africa and its impact on African social, economic, and political institutions.

2 2-hr cl. Prereq: 121 or 122, or AfAm&ASt 121 or 122; or grad standing. Not open to students with credit for 643 or AfAm&ASt 643.

**542 Thematic Courses on Islamic Civilization****542.01 Intellectual and Social Movements in the Muslim World U G 5**

Examination of significant Muslim intellectual and social movements from the advent of Islam until the present.

2 2-hr cl. Prereq: Background courses in Middle Eastern history, culture, or politics are recommended but not required. Not open to students with credit for 654.

**543 History of India****543.01 Ancient India U G 5**

A history of India from 2500 B.C.E. to the Muslim invasion of the 10th and 11th centuries C.E.

**543.02 Islamic India U G 5**

The Sultanate and Mughal Empires (1000-1707 A.D.); emphasis on imperial institutions and the interaction of Hindu and Muslim societies.

Not open to students with credit for 645.02.

**543.03 Colonial India U G 5**

A history of South Asia during the colonial period, from the arrival of Vasco da Gama in 1498 until independence and partition in 1947.

2 2-hr cl. Not open to students with credit for 645.04.

**546 History of Chinese Thought U G 5**

A study of the major trends of thought in the Chinese tradition with emphasis on the axial age transformation.

Prereq: 131 or 345.01 recommended. Not open to students with credit for 691.

**547 Chinese History****547.01 History of Ancient China U G 5**

Survey of the development of Chinese civilization from genesis to the first century B.C.

Not open to students with credit for 695.

**547.02 History of Imperial China, 221 B.C.-1800 A.D. U G 5**

Development of Chinese civilization from third century B.C. to end of 18th century.

Not open to students with credit for 696.

**547.03 Modern China, 1800-1949 U G 5**

History of modern China with emphasis on cultural contact between China and the West.

Not open to students with credit for 646.

**548 History of Japan****548.01 History of Japan before 1800 U G 5**

History of Japan to 19th century; emphasis on religion, politics, economic development, social structure and culture.

Not open to students with credit for 647.

**548.02 Modern Japan U G 5**

Political, social, and intellectual history of Japan from the beginning of the Meiji Period (1868) to the present.

Not open to students with credit for 648.



**551 Africa before Colonial Rule U G 5**

Examination of pre-colonial political, economic, and social systems, including material culture and agriculture.

2 2-hr cl. Prereq: 122 or AfAm&ASt 122 or grad standing or permission of instructor. Not open to students with credit for 674, or AfAm&ASt 611 or 674.

**552 History of South Africa U G 5**

An examination of the political and social developments in South Africa from the nineteenth century to the present.

2 2-hr cl. Not open to students with credit for 675, or AfAm&ASt 537 or 675.

**555 Topics in African-American History**

Selected topics in African-American history from the origins of slavery to the present.

2 2-hr cl. Prereq: One 10-hr GEC historical survey sequence and jr or sr standing, or permission of instructor. Each decimal subdivision repeatable, including cr hrs earned in AfAm&ASt 555.01 and 555.02. Cross-listed in African-American and African Studies.

**555.01 Topics in African-American History I U G 5**

Selected topics in African-American history from the origins of African-American culture and slavery to emancipation.

Repeatable to a maximum of 10 cr hrs.

**555.02 Topics in African-American History II U G 5**

Selected topics in African-American history from emancipation through segregation, and the Civil Rights Movement to the present.

Repeatable to a maximum of 10 cr hrs.

**556 Anglo-American History, 1607-1763 U G 5**

The history of English mainland American colonies from 1607 to 1763; emphasis on social, cultural, political, and economic development of the colonies.

Not open to students with credit for 656.

**557 Early U.S. History****557.01 American Revolution and New Nation, 1763-1800 U G 5**

Analysis of social, economic, cultural, and political changes in 18th century America.

Not open to students with credit for 658.

**557.02 Jeffersonian and Jacksonian Democracy, 1800-1845 U G 5**

A continuation of 557.01 but may be taken separately; primary emphasis on social and political history of postrevolutionary America.

Not open to students with credit for 659.

**557.03 Civil War and Reconstruction U G 5**

The causes, character, and consequences of America's intersectional war and the post-war settlement.

5 cl or 2 2-hr cl. Not open to students with credit for 662.

**559 History of Slavery in North America from Colonial Times to 1860 U G 5**

The social system of the Old South; the various aspects of secession and the impact of war.

5 cl or 2 2-hr cl. Not open to students with credit for 661.

**560 Westward Movement in American History U G 5**

The westward spread of settlement and the influence of the westward movement on American development.

Not open to students with credit for 660.

**561 History of American Science U G 5**

Social and intellectual factors from colonial beginnings to professionalization; Darwinism; American preeminence; the modern scientific crisis.

Prereq: Jr standing. Not open to students with credit for 680.

**562 History of American Medicine U P G 5**

Disease, public health, and the profession and practice of medicine in America from colonial times to the present.

5 cl. Not open to students with credit for 684.

**563 Emergence of Modern America, 1877-1917 U G 5**

Intensive study of political, economic, social, and cultural change in the U.S. from 1877 to 1917; industrialism, unionism, Populism, progressivism, immigration, and urbanization.

**565 America in Crisis, 1917-1945 U G 5**

Intensive study of political, economic, social, and cultural change in the U.S. from 1917-1945; World War, isolationism, internationalism, prosperity, and depression.

**566 Contemporary America since 1945 U G 5**

Intensive study of political, economic, social, and cultural change in the U.S. since 1945; war, cold war, social pluralism, institutional conflicts, and domestic crises.

**567 American Environmental History U G 5**

The history of American ecosystems from the last Ice Age to the present; focuses on historical debates over the causes and consequences of environmental change.

2 2-hr cl. Prereq: Soph standing.

**569 American Labor History U G 5**

Evolution of working-class life, culture, politics, and trade unionism in America from the late 18th century to the present.

Not open to students with credit for 689.01.

**575 United States Constitutional History: The Federal System U G 5**

Historical development of constitutional powers and functions of the federal and state governments and intergovernmental relationships.

Not open to students with credit for 685.

**576 United States Constitutional History: Rights and Immunities U G 5**

Historical development of the constitutional rights and immunities of the citizen.

Not open to students with credit for 686.

**577 Chicano History from Spanish Colonial to Present Period**

Chicano history from Spanish colonial period to 1900 and from 1900 to the present era.

**577.01 Chicano History, From the Spanish Colonial Period to 1900 U G 5**

Chicano experience from the late 16th century to 1900, with a special emphasis on race, class, and gender relations.

**577.02 Chicano History, From 1900 to the Present Era U G 5**

Chicano experience from 1900 to the present era, with a special emphasis on race, class, and gender relations.

**578 American Religious History U G 5**

Survey of religious history of the United States from colonial times to the present.

**579 American Cultural and Intellectual History**

Major currents in American thought and culture.

2 2-hr cl.

**579.01 American Cultural and Intellectual History, 1789-1900 U G 5**

Major currents in American thought of the 19th century.

**579.02 American Cultural and Intellectual History in the 20th Century U G 5**

Major currents in American thought and culture, 1900-present.

Not open to students with credit for 290.

**580 History of European Warfare****580.01 History of European Warfare from the Renaissance to 1870 U G 5**

An analysis of military affairs and of their interaction with political and diplomatic history.

Not open to students with credit for 625.01.

**580.02 History of European Warfare from 1870 through World War II U G 5**

A continuation of 580.01; an analysis of the military and diplomatic events which shaped the world in the 20th century.

Not open to students with credit for 625.02.

**581 European International History****581.01 19th Century U G 5**

History of the international relations and diplomacy of Europe from the Congress of Vienna to the First World War.

Not open to students with credit for 623.01.

**581.02 20th Century U G 5**

History of the international relations and diplomacy of Europe from the First World War to the present.

Not open to students with credit for 623.02.

**582 American Military Policy****582.01 American Military Policy, 1607-1914 U G 5**

American military policy from the colonial period through World War I and America's emergence as a world power; emphasis on war-waging and military institutions.

Not open to students with credit for 668.01.

**582.02 American Military Policy, 1914-1995 U G 5**

Emphasis on collective security, nuclear strategy, and the reciprocal impact of society and military institutions.

Not open to students with credit for 668.02.

**583 U.S. Diplomacy****583.01 U.S. Diplomacy from Independence to 1920 U G 5**

Domestic and international setting of U.S. diplomacy from the Revolutionary War to 1920.

Not open to students with credit for 670.01.

**583.02 U.S. Diplomacy, 1920-Present U G 5**

Domestic and international setting of U.S. diplomacy from 1920 to the present.

Not open to students with credit for 670.02 or 670.03.

**587 Business History in the World****587.01 Comparative Business History U G 5**

An historical comparison of the development of modern forms of business and business management in Great Britain, the United States, and Japan.

Not open to students with credit for 568.

**587.02 Science, Technology, and Business in Japan U G 5**

An examination of the historical development of business from the early 17th century to the present with attention to the interconnections between business, technology, and science.

Not open to students with credit for 649.

**588 Slavery in Comparative Context U G 5**

Different forms of slavery and other forms of unfree labor in different cultures, focusing mainly on Europe, the Americas, and Africa.

2 2-hr cl. Not open to students with credit for 669 or AfAm&AST 669.

**589 Marginal Groups in the Non-Western World U 5**

Comparison of the experiences of several marginal and minority groups in the major non-western civilizations from roughly the 16th-20th centuries.

2 2-hr cl.

**593 Individual Studies U G 1-5**

Individual study in some field of historical development; designed to allow the student to work on a problem of particular interest.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**594 Group Studies U G 1-5**

The investigation of particular problems in various fields of history.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs.

**596 Introduction to Quantitative Methods in History U G 5**

Prepares students to use quantitative methods in historical research and to take intermediate courses in statistics and data analysis.

Prereq: Permission of instructor. Not open to students with credit for 681 or 765.01.

**597 Critical Issues of the 20th-Century World U 5**

Contemporary global problems in historical perspectives; war and threat of war; intercontinental, racial, ideological, and economic conflicts; the search for a new world order.

Prereq: Sr standing. Not open to students with credit for 400. GEC contemporary world course.

**598 Seminars**

GEC third writing courses.

**598.01 Senior Colloquium U 5**

The nature of historical judgment and interpretation: the roles of evidence, approach, and presuppositions.

Prereq: Sr history majors or written permission of instructor. Not open to students with credit for 598 or 598.02.

**598.02 Proseminar in History U 5**

Designed to give undergraduate majors experience in the analysis of historical problems through a reading and research program.

H598.02 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for H598.02: Sr standing in history or permission of instructor. Prereq for H598.02: Honors history major or permission of instructor. Not open to students with credit for 598 or 598.01. Repeatable to a maximum of 15 crs.

**692 Workshop U G 1-8**

Arr. Repeatable.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Repeatable for different title study tours only.

Prereq: Permission of instructor.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**700 Studies in World History G 5**

Analysis of seminal works and concepts in the development of global-scaled integrative approaches to world history.

Prereq: Course work at the 600 level or above in history of more than one civilization and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**706 Studies in Medieval History****706.01 Advanced Readings in Medieval History U G 5**

Advanced reading course in sources and monographs on the principal issues and problems in medieval history, with a stress on bibliography.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**706.02 Late Medieval Paleography and Diplomatics U G 3**

Cursive hands in literature and diplomas, 1200-1500; the development of chanceries; notariats, secretariats, and the science of diplomatics; exercises with facsimiles, slides, and microfilm.

Prereq: Permission of instructor.

**708 Studies in Ancient History U G 5**

An intensive study of selected problems and sources in ancient history (Near Eastern, Greek and/or Roman); readings in the primary and secondary materials.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**709 Methodology in Ancient History G 5**

Introduction to the methodologies and bibliographies fundamental to graduate study of ancient Greek and Roman history through written papers and oral class reports.

Minimum of 2 hrs weekly in class; other time in library research. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**710 Studies in Renaissance or Reformation History U G 5**

Principal issues in the history of the Renaissance or the Reformation.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**712 Studies in Early Modern European History U G 5**

Selected topics in western European history of the 17th and 18th centuries.

Prereq: 612 or permission of instructor. Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

**713 Colloquium in Early Modern Studies G 5**

Readings seminar in topics in early modern (1350-1800) studies; history, literature, arts, and music.

1 2-hr cl. Prereq: Grad standing in history, or permission of instructor. Repeatable to a maximum of 15 cr hrs. Required for grad students in early modern European history.

**714 Studies in French History since 1815 U G 5**

An intensive study, through reading and discussion of standard works and recent scholarship, of the chief interpretative problems of modern French history.

Prereq: Grad standing or by permission to srs majoring in history. Repeatable to a maximum of 10 cr hrs.

**723 Studies in European International History G 5**

Readings in and discussion of the history of European international relations from the late 19th century.

Repeatable to a maximum of 20 cr hrs.

**726 Studies in Jewish History U G 5**

An intensive study of selected issues in Jewish history; emphasis on problems posed by available source material and by current research in the area.

Prereq: Grad standing or by permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

**727 Studies in Islamic History U G 5**

Selected topics in Islamic history and historiography.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 25 cr hrs.

**730 Studies in 20th Century European Culture U G 5**

Readings focusing on the cultural history of European Modernism (1870s-1950s).

1 2-hr cl. Prereq: 513.02 or equiv or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**731 Studies in European History, 1914 to Present U G 5**

Political, social, and economic developments; World Wars I and II; Communism, Nazism; present-day Europe; emphasis on methods of historical research and documentary analysis.

Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 10 cr hrs.

**732 Studies in German History U G 5**

Exploration of selected topics of 19th and 20th century German history; emphasis on methods of historical research and documentary analysis.

Prereq: 618 or equiv. Open only to grad students and by permission to srs majoring in history.

**738 Studies in British History U G 5**

Selected problems in British history since 1485; emphasis on different schools and interpretations, on methods of research, and an analysis of documents.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**739 Comparative Constitutional Politics G 5**

Compares constitutions and constitutionalism across cultures and through different disciplines with special attention to how people make claims to secure their rights and interests.

1 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for Comp Std 739. Cross-listed in Comparative Studies in the Humanities.

**740 Studies in Russian and Soviet History U G 5**

An intensive study of problems in selected periods of Russian history.

Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

**741 Studies in Eastern European History U G 5**

Selected topics in modern Eastern European political, social, cultural, and intellectual history and historiography; theoretical and comparative emphasis.

1 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**742 African Historiography and Methodology G 5**

The study of sources, research methods, interpretations, and research trends in the field of African history.

2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in AfAm&AST 742. Cross-listed in African-American and African Studies.

**743 Studies in African History G 5**

The study of the historical literature of Africa and various aspects of African history; topics vary.

2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in AfAm&AST 743. Cross-listed in African-American and African Studies.

**751 Studies in Latin American History U G 5**

An intensive study of problems in selected periods of Latin American history.

Prereq: Grad standing or permission of instructor for srs majoring in history or a cognate Latin American field. Repeatable to a maximum of 10 cr hrs.

**752 Readings in African-American History U G 5**

Readings in the evolution of black culture, economics and family life, race relations, and the emergence of class stratification within the black community.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs. Including cr hrs in AfAm&AST 752. Cross-listed in African-American and African Studies.

**753 Studies in the History of Religion G 5**

An intensive readings course in some aspect of the history of religion; specific topic to be announced.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**761 Studies in Mid-19th Century American History U G 5**

An intensive study of selected topics with emphasis on historiography and bibliography.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**765 Studies in Environmental History G 5**

Analysis of a range of studies in environmental history; chronological and geographical focus will be shaped by students' interests.

1 2-hr cl. Prereq: Grad standing or permission of instructor to students with credit for 567.

**767 Studies in Military History U G 5**

Selected topics and periods in military history; emphasis on recent scholarship.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**768 Studies in Military Thought and Strategy U G 5**

Analysis and comparison of the most influential writers on the theory and practice of warfare including Thucydides, Machiavelli, Clausewitz, Mahan, Fuller, and Liddell Hart.

Prereq: 668 or equiv, and grad standing; or permission of instructor.

**770 Studies in the History of American Foreign Policy U G 5**

Studies in the main problems of American foreign policy with primary emphasis on basic literatures and selected primary materials.

Prereq: 670 and grad standing; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**771 Themes in Recent United States History G 5**

Readings colloquium in selected themes in the history of the United States since 1877.

Prereq: Grad standing. Repeatable to a maximum of 20 cr hrs.

**772 Studies in Recent United States History U G 5**

Readings in selected topics in American history since 1898.

Prereq: Undergrads by permission of instructor. Repeatable to a maximum of 20 cr hrs.

**773 Studies in Business History U G 5**

Readings in the growth of capitalism, the rise of the modern corporation, government-business relations, business and society, and comparative business history.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**774 History of American Law and Society U G 5**

The history of American law and legal institutions; and their relationship to society, from colonial times to the present.

3 1.5-hr cl. Not open to students with credit for 585 or 687.

**781 Studies in Women's History U G 5**

An intensive reading course designed to prepare graduate students in the field of women's history; topic varies.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**H783 Honors Research U 3-5**

Informal conferences to allow full scope to the initiative of the student; a special topic is assigned and results are tested by papers and special examinations.

Prereq: 4th yr standing and 40 cr hrs in history courses with a grade of A in at least half of the history courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in history. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**784 Readings in American Constitutional and Legal History U G 5**

An intensive investigation of standard works as well as influential and seminal articles in American constitutional and legal history.

Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**785 Readings in American History to 1877**

Readings in the basic historical literature of colonial America and the United States through Reconstruction after the Civil War.

1 2-hr cl. Prereq: Grad standing or permission of instructor.

**785.01 Readings in American Colonial History and the American Revolution U G 5**

Readings in the basic historical literature of colonial and revolutionary America through 1783.

**785.02 Readings in the History of the Early Republic U G 5**

Readings in the basic historical literature of the early Republic, the Jacksonian era, and the market revolution from 1776 to 1850.

**785.03 Readings in the History of the United States in the Civil War Era U G 5**

Readings in the basic historical literature of the United States during the era of the Civil War and Reconstruction, from 1845 to 1877.

**786 Colloquium in the Philosophy of History, Historiography, and the Historian's Skills I U G 5**

Colloquium on the principles of historical thought, historiography, and methods of historical research.

Prereq: Grad standing in history or permission of instructor. Required of MA and PhD candidates in history.

**787 Colloquium in the Philosophy of History, Historiography, and the Historian's Skills II U G 5**

Continuation of 786 with emphasis on research methods.

Prereq: 786 or permission of instructor. Required at the discretion of the adviser.

**788 Studies in American Urban History U G 5**

A detailed examination of several themes in the growth of urban America. Prereq: 686 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**789 Topics in American History to 1877 U G 5**

Readings in selected topics in American history to 1877.

12-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**791 Topics in History G 1-5**

The investigation of particular problems in various fields of history through individual studies.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing. Repeatable to a maximum of 20 cr hrs.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

**795 Introduction to Teaching College History G 3**

Basic ideas and techniques for effective teaching of college history; emphasis on classroom application.

Prereq: Grad standing in history. Required for history grad associates. This course is graded S/U.

**796 Studies in Japanese History U G 5**

An intensive study, through reading and discussion, of major issues and recent scholarship in Japanese history.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**798 Studies in Modern Chinese History U G 5**

Readings in documents and monographs; 19th and 20th century Chinese history.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. Knowledge of Chinese desirable but not required.

**800 Seminar in Renaissance and Reformation History**

Research topic to be announced. Each subdivision repeatable to a maximum of 20 cr hrs.

**800.01 Seminar in Renaissance or Reformation History I G 5**

Renaissance and Reformation.

Repeatable to a maximum of 20 cr hrs. This is a Progress course. Credit will be awarded upon completion of 800.02.

**800.02 Seminar in Renaissance or Reformation History II G 5**

Continuation of 800.01.

Repeatable to a maximum of 20 cr hrs. This is a Progress course.

**801 Seminar in German History G 5**

Research topic to be announced.

Repeatable to a maximum of 15 cr hrs.

**802 Seminar in Russian and Soviet History**

Research topics to be announced.

**802.01 Seminar in Russian and East European History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**802.02 Seminar in Russian and East European History II G 5**

Continuation of 802.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**803 Seminar in British History**

Research topic to be announced.

**803.01 Seminar in British History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 803.02.

**803.02 Seminar in British History II G 5**

Continuation of 803.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**804 Seminar in East Central European History G 5**

Research topic to be announced.

Repeatable to a maximum of 15 cr hrs.

**805 Seminar in French History G 5**

Repeatable to a maximum of 15 cr hrs.

**807 Seminar in Medieval History**

Research topic to be announced.

**807.01 Seminar in Medieval History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 807.02.

**807.02 Seminar in Medieval History II G 5**

Continuation of 807.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**808 Seminar in Ancient History**

Topic to be announced.

Prereq: Permission of instructor.

**808.01 Seminar in Ancient History I G 5**

Repeatable to a maximum of 30 cr hrs. This is a Progress course. Credit will be awarded upon completion of 808.02.

**808.02 Seminar in Ancient History II G 5**

Continuation of 808.01.

Repeatable to a maximum of 30 cr hrs. This is a Progress course.

**810 Seminar in World History**

Research topics to be announced.

Prereq: 700 or permission of instructor.

**810.01 Seminar in World History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 810.02.

**810.02 Seminar in World History II G 5**

Continuation of 810.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**823 Seminar in European International History****823.01 Seminar in European International History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 823.02.

**823.02 Seminar in European International History II G 5**

Continuation of 823.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**827 Seminar in the History of the Islamic World**

Research topic to be announced.

**827.01 Seminar in the History of the Islamic World I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 827.02.

**827.02 Seminar in the History of the Islamic World II G 5**

Continuation of 827.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**845 Seminar in East Asian History G 5**

Research topic to be announced.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**850 Seminar in History G 5**

Research topic to be announced.

Prereq: Written permission of grad chairperson. Repeatable to a maximum of 15 cr hrs.

**851 Seminar in Latin American History**

Research topic to be announced.

Prereq: Permission of instructor.

**851.01 Seminar in Latin American History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 851.02.

**851.02 Seminar in Latin American History II G 5**

Continuation of 851.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**862 Seminar in Jewish History**

Research topic to be announced.

**862.01 Seminar in Jewish History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 862.02.

**862.02 Seminar in Jewish History II G 5**

Continuation of 862.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**867 Seminar in Early American History**

Research topic to be announced.

**867.01 Seminar in Early American History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 867.02.

**867.02 Seminar in Early American History II G 5**

Continuation of 867.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**868 Seminar in 19th-Century American History**

Research topic to be announced.

**868.01 Seminar in 19th Century American History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 868.02.

**868.02 Seminar in 19th Century American History II G 5**

Continuation of 868.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**869 Seminar in 20th-Century American History**

Research topic to be announced.

**869.01 Seminar in 20th Century American History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 869.02.

**869.02 Seminar in 20th Century American History II G 5**

Continuation of 869.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**870 Seminar in Selected Topics in American History**

Research topic to be announced.

**870.01 Seminar in Selected Topics in American History I G 5**

Topics will include business, institutional, and public policy, constitutional, cultural, African-American, women, and labor history.

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 870.02.

**870.02 Seminar in Selected Topics in American History II G 5**

Continuation of 870.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**871 Seminar in American Diplomatic History**

Prereq: Permission of instructor.

**871.01 Seminar in American Diplomatic History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 871.02.

**871.02 Seminar in American Diplomatic History II G 5**

Continuation of 871.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**873 Seminar in United States Military History G 5**

Prereq: 668 or equiv. Repeatable to a maximum of 15 cr hrs.

**875 Seminar in African-American History**

A two-quarter seminar designed to provide experience in the research and writing of a scholarly paper based on primary source material in African-American history.

Prereq: Grad standing or permission of instructor.

**875.01 Seminar in African-American History I G 5**

1 3-hr cl. Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 875.02.

**875.02 Seminar in African-American History II G 5**

Continuation of 875.01.

1 3-hr cl. Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**881 Seminar in Women's History**

Research topic to be announced.

Prereq: Permission of instructor.

**881.01 Seminar in Women's History I G 5**

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 881.02.

**881.02 Seminar in Women's History II G 5**

Continuation of 881.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**890 Topical Research Seminar I**

Research topic to be announced.

Prereq: PhD standing or permission of instructor.

**890.01 Topical Research Seminar I G 5**

A two-quarter seminar on topical themes.

Repeatable to a maximum of 10 cr hrs. This is a Progress course. Credit will be awarded upon completion of 890.02.

**890.02 Topical Research Seminar II G 5**

Continuation of 890.01.

Repeatable to a maximum of 10 cr hrs. This is a Progress course.

**891 Topical Research Seminar G 5**

A one-quarter seminar on topical themes.

Prereq: Permission of instructor. This is a Progress course.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in pressing seminars on subjects of mutual interest; topics to be announced. Repeatable by permission.

**999 Research in History G 1-18**

Research for thesis or dissertation purposes only.

Repeatable. This course is graded S/U.

## History of Art

100 Hayes Hall, 108 North Oval Mall, 292-7481

**210 Art of the Ancient World U 5**

An investigation of the art of Western civilizations (Mesopotamia, Egypt, Greece, and the Roman and Byzantine empires) in its historical and cultural context.

Su, Au, Wi, Sp Qtrs. 5 cl. H210 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums VPA course. VPA Admis Cond course.

**211 Art of the Medieval and Renaissance Worlds U 5**

An investigation of Medieval and Renaissance art in its historical and cultural context.

Su, Au, Wi, Sp Qtrs. 5 cl. H211 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums VPA course. VPA Admis Cond course.

**212 Art of the Modern World U 5**

An investigation of the art of Europe and America in its historical and cultural context from the 17th century to the present day.

Su, Au, Wi, Sp Qtrs. 5 cl. H212 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums VPA course. VPA Admis Cond course.

**213 Asian Art U 5**

A survey of Far Eastern art: India, China, and Japan.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 2nd yr standing or 1st yr standing with credit for 111, 210, 211, 212, 216, or 250. GEC arts and hums VPA course.

**216 Introduction to African Art and Archaeology U 5**

The art and archaeology of Africa with emphasis on the historic cultures of the Rock Art (8,000 B.C.), Egypt (3000 B.C.), Nok (900 B.C.), Igbo-Ukwu (695 A.D.), Ife (1200 A.D.), and Benin (1400-1900 A.D.).

5 cl. GEC arts and hums VPA course. VPA Admis Cond course.

**240 Classical Archaeology U 5**

Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites.

5 cl. Not open to students with credit for Classics 240 or History 240 or 306. Cross-listed in Classics as 240 and in History as 306. GEC arts and hums cultures and ideas course.

**250 Great Monuments of Western Civilization U 5**

Major buildings of Western civilization from antiquity to the present in their historical and cultural contexts.

Not open to students with credit for Arch 201, or any course from Arch 600-603 sequence, or more than one course from Hist Art 210-212 sequence. GEC arts and hums VPA course.

**260 Introduction to World Cinema U 5**

Chronological survey of the most influential and recognized film artists of the world.

5 cl. GEC arts and hums VPA course.

**294 Group Studies U 2-5**

The investigation of particular problems in various fields of the history of art.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**400 Women Artists of the Western World U 5**

A chronological, sociohistorical examination of women artists and their contribution to western art.

5 cl. Prereq: 212 or permission of instructor.

**415 Writing Seminar in the History of Art U 5**

Training in writing a variety of assignments commonly undertaken by art historians.

5 cl. Prereq: Jr or sr standing in hist art. GEC third writing course.

**450 An Introduction to Artistic Media and Techniques U 5**

A survey of the major historical and contemporary artistic media and techniques.

2 2-hr cl. Prereq: Hist art major or permission of instructor.

**493 Individual Studies U 2-5**

Individual study in some field of historical development; designed to allow the student to work on a problem of particular interest.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**505 Contemporary African Art: 1920 to Present U G 5**

Survey of the development of 20th-century African art.

5 cl. Prereq: 2nd yr standing. GEC arts and hums VPA course.

**H512 Abstract Art U 5**

A study of the underlying principles of abstraction in modern European art.

5 cl. Prereq: 210 or 211 or 212, and enrollment in an honors program; or permission of instructor.

**515 Renaissance Art in Italy U G 5**

A study of architecture, sculpture, and painting in Italy during the 14th, 15th, and 16th centuries.

5 cl. Prereq: 2nd yr standing. Not open to students with credit for 629, 630.01, or 630.02. GEC arts and hums VPA course.

**519 Great Masters of the 17th and 18th Centuries U G 5**

A study concentrating upon the individual careers of Caravaggio, Bernini, Rubens, Rembrandt, Velazquez, Poussin, Watteau, Tiepolo, and David.

Prereq: 2nd yr standing. Not open to hist art majors or to students with credit for 631, 632, or 634. GEC arts and hums VPA course.

**520 19th- and 20th-Century European Art U G 5**

European art from about 1800 to the present, with emphasis on the outstanding masters of painting and sculpture.

5 cl. Prereq: 2nd yr standing. Not open to students with credit for 635 or 636. GEC arts and hums VPA course.

**525 Medieval Art U G 5**

Art and architecture of Europe and the Eastern Mediterranean from the 5th to the 15th centuries; focuses on visual culture of monasteries, cathedrals, and castles.

5 cl. Prereq: 2nd yr standing. Not open to students with credit for 603, 625, or 651. GEC arts and hums VPA course.

**530 American Art U G 5**

A study of architecture, painting, and sculpture in America.

5 cl. H530 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 2nd yr standing. Not open to students with credit for 637 or 638. GEC arts and hums VPA course.

**550 Art of Paris U G 5**

Study of the painting, sculpture, buildings, and public and private spaces created in and for the people and the city of Paris.

5 cl. Prereq: 2nd yr standing.

**576 The Arts of China U G 5**

An overview of the visual arts of China and their cultural context from prehistoric times to the modern era.

5 cl. Prereq: Soph standing or permission of instructor. GEC arts and hums VPA course.

**600 Introduction to Contemporary Art Historical Theory U G 5**

Exploration of new/theoretical paradigms in art history.

5 cl.

**601 Architecture of the Ancient Orient U G 5**

Survey of architecture of southwest Asia and the Nile Valley from the fourth millennium B.C. to the fourth century B.C.

5 cl. Prereq: 210 or permission of instructor. Not open to students with credit for 621 or 661.

**602 Ancient Greek and Roman Architecture U G 5**

Survey of architecture and architectural decoration in the ancient Greek and Roman worlds (ca. 1000 B.C.-A.D. 350).

5 cl. Prereq: 210 or 10 cr hrs of ancient history or classics, or permission of instructor. Not open to students with credit for Arch 600.

**603 Architecture of the Middle Ages U G 5**

Major buildings of the Early Christian, Byzantine, Carolingian, Romanesque, and Gothic periods.

5 cl. Prereq: 211 or permission of instructor.

**604 Renaissance Architecture U G 5**

Survey of 15th- and 16th-century architecture in western Europe.

5 cl. Prereq: 211 or permission of instructor.

**605 Baroque Architecture U G 5**

Survey of late 16th-, 17th-, and early 18th-century architecture in western Europe.

5 cl. Prereq: 212 or permission of instructor.

**606 American Architecture U G 5**

Survey of American architecture from the pre-colonial era to the present day.

5 cl. Prereq: 212 or permission of instructor.

**607 19th-Century European Architecture U G 5**

Survey of 19th-century European city planning; major architects and architectural styles; the revolution in building types and materials.

5 cl. Prereq: 212 or permission of instructor.

**610 African Art and Archaeology I U G 5**

A study of the art and culture of west Africa with emphasis on stylistic, historic, and archaeological implications.

5 cl. Prereq: 216 or permission of instructor.

**611 African Art and Archaeology II U G 5**

The study of the art and culture of central and southern Africa with emphasis on stylistic, historic, and archaeological implications.

5 cl. Prereq: 216 or permission of instructor.

**614 Comparative Study of African and European Art U G 5**

A critical study of the relationships between African and European art involving theory and practice.

5 cl. Prereq: Permission of instructor or jr standing.

**615 Contemporary Art of West Africa U G 5**

Painting and sculpture of Senegal, Sierra Leone, Liberia, Ivory Coast, Ghana, Dahomey, Nigeria, etc., focusing on history, style, and culture.

5 cl. Prereq: 216 or 505 or 610 or 614 or permission of instructor.

**616 Contemporary Art of Central Africa U G 5**

Painting and sculpture of Camerouns, Gabon, Republic of Congo, Zaire, Zambia, Sudan, Uganda, etc., focusing on history, style, and culture.

5 cl. Prereq: 216 or 505 or 610 or 614 or permission of instructor.

**617 Contemporary Art of East and Southern Africa U G 5**

Painting and sculpture of Ethiopia, Kenya, Tanzania, Mozambique, Southern Rhodesia, Malawi, South Africa, etc., focusing on history of style and culture.

5 cl. Prereq: 216 or 505 or 611 or 614 or permission of instructor.

**618 Contemporary Art of North Africa U G 5**

20th-century painting, sculpture, and tapestries of Morocco, Algeria, Libya, United Arab Republic, Mauritania, Mali, Niger, and Chad, focusing on history, style, and culture.

5 cl. Prereq: 216 or 505 or 610 or 611 or 614 or permission of instructor.

**621 Ancient Egyptian Art and Archaeology U G 5**

A specialized study of the architecture, sculpture, painting, and minor arts of ancient Egypt.

5 cl. Prereq: 210 or equiv with permission of instructor.

**622 Art of Ancient Greece U G 5**

Survey of art in Greece from the early Iron Age to the end of the classical era (1100-323 B.C.).

5 cl. Prereq: Either 210, 10 cr hrs in classics, 10 cr hrs in ancient history, or permission of instructor.

**623 Hellenistic and Roman Art U G 5**

Survey of art in the Mediterranean Basin during the Hellenistic and Roman Imperial eras (323 B.C.-ca. A.D. 350).

5 cl. Prereq: Either 210, 10 cr hrs in classics, 10 cr hrs in ancient history, or permission of instructor. Not open to students with credit for 623.01 or 623.02.

**624 Early Christian and Byzantine Art U G 5**

The Christian art of the Mediterranean region to the 8th century and the art of the Byzantine Empire to the 15th century.

5 cl. Prereq: 210 or permission of instructor.

**625 Romanesque and Gothic Art U G 5**

The art of Western Europe from the Carolingian period to the 14th century.

5 cl. Prereq: 210 or 211 or permission of instructor.

**627 Northern Renaissance Art U G 5**

Art of the Low Countries, France and Germany from 1350 to 1550-with emphasis on Campin, Jan van Eyck, van der Weyden, van der Goes, Durer, Grunewald, Bosch, and Breughel.

5 cl. Prereq: 211 or permission of instructor.

**628 Gothic towards Renaissance: The Fourteenth Century U G 5**

Art of the Late Middle Ages in Western Europe in its social context, with new developments and major artists (Giotto, Duccio, Pucelle, Sluter, Parler) emphasized.

5 cl. Prereq: 211 or permission of instructor.

**629 15th-Century Italian Art U G 5**

A selective study of painting and sculpture of the Quattrocento.

5 cl. Prereq: 211 or equiv with permission of instructor.

**630 16th-Century Italian Art**

A study of the major artists of the High Renaissance and Mannerist periods in Italy.

5 cl. Prereq: 211 or equiv with permission of instructor.

**630.01 Florentine and Roman Art of the 16th Century U G 5****630.02 Venetian and North Italian Art of the 16th Century U G 5****631 Baroque Art in Italy, France, and Spain U G 5**

Painting, sculpture, and architecture in Italy, France, Spain, 1590-1700.

5 cl. Prereq: 212 or equiv with permission of instructor.

**632 Dutch Art of the Golden Age U G 5**

Major artists, including Rembrandt and Vermeer, and developments of 17th century Dutch art examined with a focus on modes of representation and issues of interpretation.

5 cl. Prereq: 212 or 519 or permission of instructor. Not open to students with credit for 633 prior to Au Qtr 1998.

**633 Realism and Symbolism in Netherlandish Art U G 5**

Examination of the issues of interpretation and representation in context of paintings by artists such as Hals, Vermeer, de Hooch, Jan Steen, Ruisdael, and de Heem.

5 cl. Prereq: 212 or 519.

**634 Art of the 18th Century in Europe U G 5**

Architecture, painting and sculpture in Rome, Venice, Paris and London during the Age of the Enlightenment.

5 cl. Prereq: 212 or equiv with permission of instructor.

**635 19th-Century European Art**

5 cl. Prereq: 212 or permission of instructor. Not open to students with credit for 635.

**635.01 Neo-Classicism and Romanticism: 1760-1830 U G 5**

Artistic trends in European art and architecture during the late 18th and early 19th centuries.

**635.02 19th-Century European Art, 1848-1896 U G 5**

Realist, Impressionist, and Symbolist art in Europe and Great Britain.

**636 20th-Century European Art**

5 cl. Prereq: 212 or permission of instructor. Not open to students with credit for 636.

**636.01 20th-Century European Art, 1896-1914 U G 5**

Matisse, Picasso, Art Nouveau, and the Style Moderne; a survey of the foundations of modern art (Expressionism, Cubism, Futurism, and Non-representational).

**636.02 20th-Century European Art, 1914-1945 U G 5**

European art between the World Wars: Post-Cubism, Dada and Surrealism, Bauhaus and Constructivism, and Abstraction.

**637 American Painting and Sculpture to 1900 U G 5**

History of painting and sculpture in America from colonial times to the end of the 19th century.

5 cl. Prereq: 212 or permission of instructor, and English 110 or 111 or equiv.

**638 Modern American Painting and Sculpture, 1900-1945 U G 5**

American painting and sculpture from 1900 to 1945.

5 cl. Prereq: 212 or permission of instructor, and English 110 or 111 or equiv.

**640 Contemporary Art since 1945 U G 5**

Visual arts of Europe and the United States from 1945 to the present.

Prereq: 212 or permission of instructor.

**644 Russian Art U G 5**

A survey of Russian arts from the rise of Muscovy to glasnost; includes icon-painting, the imperial architecture of St. Petersburg and Socialist Realism.

5 cl. Prereq: 211 or 212 or permission of instructor. Not open to students with credit for 236.

**645 Modern Russian Art U G 5**

Avant-garde movements in Russian art of the late 19th and early 20th centuries.

Prereq: 212 or permission of instructor.

**646 Introduction to Film Theory U G 5**

Study of historically important theories of film art.

5 cl. Prereq: 2nd yr standing.

**647 Silent Cinema: 1895-1927 U G 5**

A study of development of silent film as an international art form.

5-hr cl. Prereq: 2nd yr standing.

**648 Classical Sound Cinema: 1927-1948 U G 5**

A study of the development of film as an art form from the advent of sound to WW II.

5 cl. Prereq: 2nd yr standing.

**649 Recent Cinema: 1948-Present U G 5**

A study of film as an art form since WW II.

5 cl. Prereq: 2nd yr standing.

**651 Romanesque and Gothic Sculpture U G 5**

Development of sculpture from the 11th through the 14th centuries, with emphasis on architectural programs, their contexts, iconography, and style.

5 cl. Prereq: 211 or permission of instructor.

**652 Medieval and Renaissance Manuscript Illumination U G 5**

A chronological survey of medieval and Renaissance illuminated manuscripts in the West.

5 cl. Prereq: 210 or 211 or permission of instructor.

**653 Avant-Garde and Documentary Cinema U G 5**

General chronological survey of significant contributions to documentary and avant-garde cinema.

5 cl. Prereq: 2nd yr standing.

**661 Art and Archaeology of the Ancient Near East U G 5**

A specialized study of the art and archaeology of the ancient Near East focusing on the cultures of the Mesopotamian valley and surrounding areas.

5 cl. Prereq: 210 or equiv with permission of instructor.

**663 Early Islamic Art U G 5**

Introduction to the history of Islamic art and architecture from its formation through the classical age (i.e. from the 7th through the 13th centuries).

5 cl. Prereq: 210 or 211 or 213 or permission of instructor.

**664 Later Islamic Art U G 5**

Introduction to the history of Islamic art and architecture in the later period (14th through 18th centuries) including the Mongol, Timurid, Mamluk, Ottoman, Safavid, and Indo-Muslim art.

5 cl. Prereq: 210 or 211 or 213 or permission of instructor.

**670 Buddhist Art: Theory and History U G 5**

An analysis of Buddhism and its bearing on the art of India, Nepal, Tibet, China, and Japan.

5 cl.

**671 Art of India I U G 5**

Art and architecture of India from prehistoric times through the Gupta period, ca. 500 C.E. stressing relationship to religious and cultural developments.

5 cl.

**672\* Art of India II U G 5**

Art and architecture of India from the Gupta period, ca. 500 C.E. to the Muslim period stressing relationship to religious and cultural developments.

5 cl.

**673 Art of Central Asia U G 5**

An analysis of the cross currents of style and iconography that constitute the pre-Muslim art of Central Asia.

5 cl.

**674 Art of Nepal and Tibet U G 5**

A study and analysis of the major aspects of style, iconography, and historical sequence as found in the arts of Nepal and Tibet.

5 cl.

**675 Art of India III U G 5**

A survey of architecture and painting after the Muslim conquest with emphasis on intermixture of indigenous and foreign styles.

**676 Hindu Iconography U G 5**

A survey of Hindu iconography emphasizing the development and meaning of specific deities.

5 cl.

**677 Chinese Art**

5 cl. Prereq: English 110 or 111 or equiv.

**677.01 Pre-Buddhist U G 5**

Examination of archaeological finds in China, ca. 4000 B.C. to the beginning of the 10th century A.D.; with emphasis on recent discoveries.

**677.02 Buddhist U G 5**

Examination of the Buddhist arts of China; with emphasis on religious expression and content.



**678 Chinese Art: Painting**

5 cl. Prereq: 213 or permission of instructor.

**678.01 Chinese Painting to 1368 U G 5**

A survey of Chinese painting from the Han period through the Yuan dynasty, with emphasis on style, subject matter, and cultural context.

**678.02 Chinese Painting from 1368 to the Present U G 5**

A survey of Chinese painting from the Ming dynasty to the present, with emphasis on style, subject matter, and cultural context.

**681 Japanese Art: Proto-Historic and Buddhist U G 5**

Selected topics in the history of Japanese arts of the Proto-Historic period and the Buddhist religion.

Prereq: English 110 or 111 or equiv.

**682 Japanese Art: Painting and Prints U G 5**

Selected topics in the history of Japanese pictorial art and related subjects.

Prereq: English 110 or 111 or equiv.

**690 Selected Topics**

Topics to be announced.

5 cl.

**690.01 Western Art U G 5**

Repeatable to a maximum of 15 cr hrs.

**690.02 Asian and Non-Western Art U G 5**

Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies U G 2-5**

Advanced study for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**704 Studies in African Art and Archaeology U G 3-5**

Studies in African art emphasizing problem identification, concept organization, library research, and individual criticism.

3-5 cl. Prereq: 610 or 611 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**705 Studies in Contemporary African Art U G 3-5**

Introduction to research in 20th-century African art.

Arr cl. Prereq: 505 or 615 or 616 or 617 or 618 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**710 Studies in Art Theory and Criticism U G 3-5**

Investigations of theories of art and their applications.

Prereq: 600. Not open to students with credit for 839. Repeatable to a maximum of 15 cr hrs.

**715 Historical Conceptual Bases of Art History U G 5**

Investigation of intellectual and historical foundations of modern art history.

5-hr cl. Prereq: 20 cr hrs in hist art.

**717 Studies in Medieval Art U G 3-5**

Selected problems in architecture, painting, sculpture, and the minor arts from the Early Christian through the Byzantine and Gothic periods.

Prereq: 624 or 625 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**718 Studies in Italian Renaissance Art U G 3-5**

Selected problems in painting, sculpture, and architecture of Italy in the 14th, 15th, and 16th centuries.

3-5 cl. Prereq: 515 or 629 or 630, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**720 Studies in Near Eastern Art and Archaeology U G 3-5**

Selected problems in the art and archaeology of the Near East.

Prereq: 621 or 661 or 663, or equiv with permission of instructor. Repeatable to a maximum of 15 cr hrs.

**722 Studies in Ancient Greek and Roman Art U G 3-5**

Selected problems in the art of Ancient Greece and Rome, 11th century B.C. to 4th century A.D.

3-5 cl. Prereq: 622 or 623 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**724 Studies in Northern Baroque Art U G 3-5**

Selected problems in the painting, sculpture, and architecture of Belgium, the Netherlands, Germany, and France in the 17th and 18th centuries.

3-5 cl. Prereq: 632. Repeatable to a maximum of 15 cr hrs.

**725 Studies in Italian Baroque Art U G 3-5**

Selected problems in the painting, sculpture, and architecture of the 17th century.

3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**726 Studies in Spanish Art U G 3-5**

Selected studies in the architecture, sculpture, painting, and minor arts of Spain.

3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**734 Studies in 18th Century European Art U G 5**

Selected problems in the painting, sculpture, architecture, graphic, and decorative arts of the 18th century in Europe.

1 4-hr cl or 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**737 Studies in Modern Art U G 3-5**

Selected studies in the art of the United States or modern Europe.

3-5 cl. Prereq: 635 or 636 or 637 or 638, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**745 Studies in Russian Art U G 3-5**

Selected problems in the painting, sculpture, and architecture of Russia.

Prereq: 645 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**747 Studies in Late Gothic and Northern Renaissance Art U G 3-5**

Selected problems in the art of the Low Countries, Germany, and France from the 14th through the 16th centuries.

3-5 cl. Prereq: 627 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**750 Selected Topics in Cinema Studies U G 5**

Intensive studies of specific movements, artists, periods and theories of cinema.

2-2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**770 Studies in Buddhist Art U G 3-5**

Introduction to research in Buddhist art and iconography.

3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**771 Studies in the Art of India U G 3-5**

Research problems in the art of India at an introductory level.

Repeatable to a maximum of 35 cr hrs.

**774 Studies in Inner Asian Art U G 3-5**

Introduction to research in Inner Asian history of art.

Prereq: 673 or 674 or 677 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**776 Studies in Chinese Art U G 3-5**

Introduction to research in Chinese art historical problems.

Prereq: 677 or 678 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**780 Studies in Japanese Art U G 3-5**

Introduction to research in Japanese art historical problems.

Prereq: 681 or 682 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of study arranged for each student, with individual conferences, reports, and honors thesis.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the hist art courses taken and with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degree BA with distinction in hist art. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**793 Individual Studies U G 2-5**

Advanced study for students in specialized programs.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**804 Problems in African Art and Archaeology G 5**

Research techniques with emphasis on scholarly methods involving extensive search for available source materials on African art.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**805 Problems in Contemporary African Art G 5**

Advanced study and specialized research on major topical problems in 20th-century African art.

5 cl. Prereq: Two 600-level courses in contemporary African art or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**816 Museum Problems G 3-5**

An introduction to professional work in museums.

Repeatable to a maximum of 15 cr hrs.

**822 Problems in Ancient Art G 3-5**

Advanced study and specialized research on major topical problems in ancient art.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**824 Problems in Northern Baroque Art G 3-5**

Advanced study and specialized research on major topical problems in Northern Baroque Art.

3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**832 Problems in American Art G 2-5**

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**893 Individual Studies G 1-5**

Doctoral students may register for individual study in areas not normally covered by courses.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**917 Seminar in Medieval Art G 2-5**

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**920 Seminar in Italian Renaissance Art G 2-5**

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**930 Seminar in Modern Art G 2-5**

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**970 Seminar in Buddhist Art G 3-5**

Advanced research in Buddhist iconographic problems.

Prereq: Two of the following: 670, 671, 673, 677, 681, and 770; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**971 Seminar in the Art of India G 2-5**

Research problems in the art of India.

Repeatable to a maximum of 35 cr hrs.

**976 Seminar in Chinese Art G 3-5**

Advanced studies in the history of Chinese art.

Prereq: 677 or 678 or 776 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**980 Seminar in Japanese Art G 3-5**

Advanced studies in the history of Japanese art.

Prereq: 681 or 682 or 780 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**999 Research in History of Art G 1-18**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Honors, University**

University Honors & Scholars Center, 220 West 12th Avenue, 292-3135

**H296 University Honors Proseminar U 3-5**

Designed to foster an understanding of concepts, issues, and problems which transcend the boundaries of a single discipline; topic varies.

Au, Wi, Sp Qtrs. Arr. Prereq: Fresh or soph standing in an honors program and/or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H596 University Honors Seminar U 2-5**

Designed to foster appreciation, understanding and/or problem-solving skills related to concepts, issues, or problems that transcend the boundaries of a single discipline; topic varies.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr. or sr standing in an honors program. Repeatable to a maximum of 15 cr hrs. Repeatable with permission of University Honors director.

**Horticulture and Crop Science**

202 Kottman Hall, 2021 Coffey Road, 292-2001

**150 Introduction to Horticulture U 4**

Guide to the applied practices associated with using and raising horticultural plants.

Wi Qtr. 3 cl, 1 2-hr lab. Not open to majors in landscape horticulture or to students with credit for Hort 150.

**200 Crop Science U 5**

Study of environmental, genetic, and cultural factors which influence crop plant productivity.

Au, Wi Qtrs. 4 cl, 1 2-hr lab. Prereq: Biology 101 or 113. Not open to students with credit for Agronomy 200. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**210 Landscape Horticulture U 5**

Introduction to the science, operations, management and history of landscape horticulture.

Au Qtr. 2 1.5-hr cl, 2 3-hr labs. Prereq: Biology 101 or 113, or Pint Bio 101, Chem 101 or 121, English 110, Math 130 or 148. Not open to students with credit for Hort 210.

**232 Landscape Maintenance U 4**

Management of landscape plantings with special emphasis on transplanting, mulching, nutrition, pest control, pruning, physiological disorders, and diagnosing plant problems.

Su, Wi Qtrs. 2 2-hr cl. Not open to students with credit for Hort 232 or Nat Res 232. Cross-listed in Natural Resources.

**234 Landscape Plants U 5**

Identification, usage, and maintenance of landscape plants, including trees, shrubs, vines, groundcovers, ferns, grasses, annuals, and perennials.

Sp Qtr. 4 cl, 1 2-hr lab. Not open to majors in landscape horticulture or to students with credit for Hort 234, 435, 436 or H&CS 435, 436.

**260 Data Analysis and Interpretation for Decision Making U 5**

Basic concepts of probability and statistics applied to the interpretation of quantitative data.

Au, Wi Qtrs. 4 cl, 1 2-hr rec/lab. Prereq: Math 130 or 148. Not open to students with credit for Animl Sc 210, Anim Sci 260, Agr Econ 205, Agr Educ 387, Agronomy 210, Stat 125, 135, 145. Cross-listed in Animal Sciences. GEC course.

**270 Historical Perspectives on Golf Course Design and Management U 3**

A historical survey of golf course design and management and its affect on contemporary design and management.

Wi Qtr. 1 3-hr cl.

**294 Group Studies U 1-5**

Special group studies in the areas of crop science, landscape horticulture, and turf science.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**300 General Plant Biology U 5**

Plant structure and function; growth and development; diversity, reproduction, and evolution of lower and flowering plants; people, the biosphere, and plant diversity.

Au, Wi, Sp Qtrs. 3 cl, 2 2-hr labs. Prereq: Biology 101 or 113. Not open to students with credit for Hort 300 or Pint Bio 300. Cross-listed in Plant Biology. BER/GEC/LAR course. Winter quarter is taught in Wooster.

**310 Control of Crop Development U 4**

Practices in crop and turf science as related to the physiological manipulation of crops directly or indirectly through modification of the environment.  
Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 200 or 300 or Agronomy 200 or Hort 300. Not open to students with credit for Hort 310.

**320 Plant Propagation: Manipulation of Plant Reproduction U 4**

Techniques, equipment, and facilities involved in sexual and asexual multiplication of plants.  
Au Qtr. 3 cl, 1 2-hr lab. Prereq: 300 or Hort 300. Not open to students with credit for Hort 320.

**322 Micropropagation and Tissue Culture U 3**

Introduction to micropropagation and tissue culture techniques and principles using ornamental, fruit, vegetable and agronomic crops as models.  
Wi Qtr. 1 cl, 1 4-hr lab. Prereq: Gen Chem T131 and Gen Biol T120 or T125 or permission of instructor. Course is offered only at the Agricultural Technical Institute and the OARDC in Wooster, OH.

**325 Crop Genetic Resources U 4**

Past, present, and future issues in germplasm conservation, ownership, and use for major food and ornamental crops. Includes practical uses of genetics in crop improvement.

Sp Qtr. 2 2-hr cl. Prereq: 200 or 300 or Agronomy 200 or Hort/Pint Bio 300.

**401 The Horticulture and Crop Science Industries and Organizations**

Field visits to industries and organizations where theory associated with Horticulture and Crop Science is practiced.

Au Qtr. 2 all-day field trips and 2 2-hr discussion. Prereq: Permission of instructor.

**401.01 The Floriculture Industry U 1**

Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**401.02 Environmental Horticulture Organizations in Ohio U 1**

Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**411 Grain Crops U 3**

Study of grain crops; classification, distribution, variety selection and improvement, cultural practices, harvesting, and utilization.

Wi, Sp Qtrs. 3 cl. Prereq: 200 or 300 or Agronomy 200 or Hort 300 or equiv. Not open to students with credit for Agronomy 411.

**412 Forage Crops U 3**

Growth characteristics, adaptation and utilization of different species for hay, pasture, silage, and land conservation.

Sp Qtr. 3 cl. Prereq: 200 or 300 or Agronomy 200 or Hort 300 or equiv. Not open to students with credit for Agronomy 412.

**414 Crop Science Laboratory U 2**

Experimental approach to forage and grain crop growth and development with emphasis on the relationship of crop characteristics to management, quality, and utilization.

Sp Qtr. 1 3-hr lab, 1 day field trip. Prereq: 411 or 412 or Agronomy 411 or 412. Not open to students with credit for Agronomy 414.

**420 Seed Science U 4**

A study of the physiological processes of seed formation, dormancy, and germination; the production and marketing of seed in commerce.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 200 or 300 or Agronomy 200 or Hort 300. Not open to students with credit for Agronomy 420.

**422 Principles of Weed Science U 4**

A study of weeds, their identification, reproduction, and methods of control; emphasis on various aspects of chemical control measures.

Au, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: 200 or 300 or Agronomy 200 or Hort 300. Not open to students with credit for Agronomy 422.

**430 Indoor Plants U 3**

The identification, maintenance, and use of plants for interior decoration in the home, office, public buildings, and related locations.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 300 or Hort 300 or permission of instructor. Not open to students with credit for Hort 430.

**431 Herbaceous Ornamental Plants U 5**

Identification, culture, and landscape use of bulbs, annuals, and herbaceous perennials.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: 300 or Hort 300. Not open to students with credit for Hort 431.

**435 Deciduous Shade Trees and Narrowleaf Evergreens U 6**

Study of deciduous shade trees and narrow leaf evergreens including their identification, growth habits, ornamental features, environmental adaptation, utilization, and management in the landscape.

Au Qtr. 4 cl, 2 2-hr labs. Prereq: 300 or Hort 300. Not open to students with credit for Hort 435.

**436 Deciduous Flowering Trees and Shrubs, Vines, and Broadleaf Evergreens U 6**

Study of deciduous flowering trees, flowering shrubs, vines, and broadleaf evergreens including their identification, growth habits, ornamental features, environmental adaptation, utilization, and management in the landscape.

Sp Qtr. 4 cl, 2 2-hr labs. Prereq: 300 or Hort 300. Not open to students with credit for Hort 436.

**438 Theme and Specialty Gardens U 2**

Study of the principles and techniques of theme and specialty gardening.

Wi Qtr. 1 3-hr cl. Prereq: 431 or Hort 431 or permission of instructor. Not open to students with credit for Hort 438.

**450\*\* Principles of Vegetable Crop Production U 5**

The production and utilization of vegetable crops with emphasis on environmental factors which influence growing and handling of these crops.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 300 or Hort 300. Not open to students with credit for Hort 450. Offered Odd years.

**460\*\* Fruit Crop Physiology and Production U 5**

Contemporary fruit crop production principles/practices and their physiological bases as affected by environmental and economic factors.

Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 200 or 310 or Agronomy 200 or permission of instructor. Offered even years.

**470 Principles of Turfgrass Selection and Management U 4**

Adaptation, identification, uses, growth characteristics, growth responses, and fundamental principles essential to the production of quality turf.

Au, Sp Qtrs. 2 cl, 1 2-hr cl. Prereq: 200 or 300 or Agronomy 200 or Hort 300. Not open to students with credit for Agronomy 413.

**489 Internship Experience U 1-5**

Ten or more weeks of supervised practical experience in an approved enterprise. Seminar required.

Su, Au, Wi, Sp Qtrs. 2 cl. Not open to students with credit for 489.01. Repeatable to a maximum of 10 cr hrs. Class time TBA quarterly. Each student must present a 25 min seminar.

**494 Group Studies U 1-5**

Special group studies in the areas of crop science, landscape horticulture, and turf science.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**501 Landscape Plant Selection U G 5**

Identifying the 'right plant' for the 'right place' to develop ecologically appropriate landscapes.

Sp Qtr. 2 cl, 2 4-hr lab. Prereq: H&CS 210, Soil Sci 300.01; H&CS 431 or 435 or 436; or permission of instructor.

**502 Management of Constructed Landscapes U G 5**

Technical (weeds, pests) and business issues (labor, estimation, equipment) typical of landscape maintenance in Ohio, with emphasis on field experience.

Au Qtr. 2 cl, 1 4-hr lab. Prereq: 435 or 436 or Forestry 221; H&CS 501; and Soil Sci 300.01 or permission of instructor.

**510 Crop Production in Developing Countries U G 5**

Fundamental studies of field and plantation crops in tropical and subtropical countries with emphasis on means and techniques for obtaining production increases.

Wi Qtr. 5 cl. Prereq: 200 or Agronomy 200 and Agronomy 240 or Soil Sci 300.01 or equiv. Not open to students with credit for Agronomy 510.

**521 Greenhouse Environment Control U G 5**

Principles and practices of greenhouse operation including construction, heating, cooling, light, temperature, ventilation, moisture, soils, and nutrition.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: 300 or Hort 300 or Pint Bio 300. Not open to students with credit for Hort 521.

**522 Commercial Production of Floriculture Crops U G 5**

Physiological principles and environmental factors involving photoperiod, thermoperiod, nutrition, moisture, soil, carbon dioxide, and chemical growth regulators involved in the commercial production of selected plants.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 521 or Hort 521. Not open to students with credit for Hort 522.

**533 Management of Commercial Nursery Operations U G 5**

Detailed consideration of factors involving commercial nursery site selection, production, harvesting, and marketing of woody ornamentals and related products.

Wi Qtr. 4 cl, 3-hr lab. Prereq: 320 or Hort 320. Not open to students with credit for Hort 533.

**560 Computers in Horticulture Management U 4**

Develops an understanding of the applications of computer software to the areas of production planning, control, and electronic marketing for horticultural enterprises.

Wi Qtr. 2 2-hr cl, 1-hr lab. Not open to students with credit for Hort 560.

**570 Turfgrass Management and Science U G 4**

A study of cultural practices and environmental factors affecting the maintenance of quality turf.

Wi Qtr. 2 cl, 1 2-hr cl. Prereq: 470 or Agronomy 413. Not open to students with credit for Agronomy 522.

**591 Workshop in Horticulture and Crop Science U G 3**

Study of selected topics in horticulture and crop science appropriate for teachers and extension agents.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 5 cr hrs of previous course work in Horticulture and Crop Science or equiv. Not open to students with credit for Agronomy 591. Repeatable to a maximum of 12 cr hrs.

**593 Individual Studies U 1-5**

Special studies in the areas of crop science, landscape horticulture, and turf science.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

**597 Issues in Biotechnology U 5**

Issues pertaining to the means and methods, products, prospects, safety, regulation, ethics, and societal effects of biotechnology.

Au Qtr. 5 cl. Prereq: Biology 101 or 113, or Plnt Bio 101 or equiv; and sr standing. Not open to students with credit for Hort 597. GEC/LAR course.

**598 Turfgrass Science Seminar U G 1**

Academic and industry experts present information and lead discussion on current issues facing the turfgrass industry.

Sp Qtr. 1 cl. Prereq: Jr or sr standing in turf science, crop science, landscape horticulture, or permission of instructor. Repeatable to a maximum of 2 cr hrs.

**600 Studies in Quality, Ethics, and the Global Environment U 5**

Principles and practices of contemporary horticultural management with emphasis in global environments, social responsibility, and company-wide quality.

Au Qtr. 3 1.5-hr cl. Prereq: 489 or Hort 489 or equiv, second writing course, and 10 cr hrs at 400 level or above in horticulture or horticulture and crop science. Not open to students with credit for Agronomy 600 or Hort 600. GEC course.

**601 Issues in Crop and Turf Science U 5**

Technical and business issues in contemporary crop production industries and their implications for the ecological, political, social and economic concerns of the global community.

Au, Wi Qtrs. 2 2-hr cl, 1 cl. Prereq: 200 or Agronomy 200 and Agronomy 240 or Soil Sci 300.01, second writing course, and sr standing in Crop Science or Turf Science. Not open to students with credit for Agronomy 600. GEC course.

**602 Field Crop Ecology U G 3**

A study of the agroecosystem; the ecology of managed agricultural systems; the interrelationships of climates, soils, and organisms in crop production.

Wi Qtr. 3 cl. Prereq: 10 cr hrs of crops courses and 5 cr hrs of soils courses at the 300 level or higher. Not open to students with credit for Agronomy 602.

**604 Research Methods in Plant Science**

2.5-hr cl, 2 3-hr labs. Prereq: 300 or Biology 114 or Plnt Bio 300 or 436 or grad standing or permission of instructor. Not open to students with credit for these courses in Plnt Bio or Plnt Pth. Cross-listed in Plant Biology and Plant Pathology.

**604.01 Whole Plant U G 4**

Introduction to scientific skills and modern research methods for the study of plants at the whole plant level.

Au Qtr.

**604.02 Cell and Tissue Level U G 4**

Introduction to scientific skills and modern research methods for the study of plants at the cell and tissue level.

Wi Qtr.

**604.03 Molecular Level U G 4**

Introduction to scientific skills and modern research methods for the study of plants at the molecular level.

Sp Qtr.

**605^\* Advanced Vegetable Crops Production and Physiology U G 5**

A physiological study of the principal vegetable crops used for processing and fresh market; cultural practices are also considered.

Wi Qtr. 3 1.5-hr cl. Prereq: 450 or Hort 450. Not open to students with credit for Hort 605. Offered even years.

**610 Weed Control in Horticultural Crops U G 4**

A study of environmental and cultural factors which influence weed development in horticultural crops and a review of the principles of chemical and mechanical weed control.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 300 Hort 300. Not open to students with credit for Hort 610.

**612 Principles of Grassland Management U G 5**

Plant-animal requirements and correlations in the maintenance, management, and utilization of meadows, pastures, and ranges.

Sp Qtr. 5 cl and 1 field trip arr per qtr. Not open to students with credit for Agronomy 612.

**620 Plant Cell Transformation U G 4**

Principles of plant tissue culture as related to biotechnology and agronomic and horticultural crop improvement.

Au Qtr. 2 1-hr cl, 2 2-hr labs. Prereq: Mol Gen 500 and Plnt Bio 630, or equiv, or permission of instructor. Not open to students with credit for Agronomy 620 or Hort 620. Odd years taught in Wooster; even years taught in Columbus.

**621 Crop Physiology and Production U G 4**

A study of physiological processes in agronomic and horticultural crops and how they relate to cultural practices and production ecosystems.

Au Qtr. 4 cl. Prereq: Biology 113 or equiv. Not open to students with credit for Agronomy 621.

**625\* Crop Breeding U G 4**

Principles of genetics and methods of plant breeding applied to the improvement of crops and the ultimate development of superior varieties.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 200 or 300 or Agronomy 200 or Hort 300 or Plnt Bio 300; and Mol Gen 140 or 500. Not open to students with credit for Agronomy 625. Offered odd years.

**630 Seed Production U G 4**

The study of seed production principles (from flowering/fruit set through seed quality assessment and seedling establishment) from a physiological and ecological perspective.

Wi Qtr. 4 1-hr cl. Prereq: 420 or permission of instructor.

**635\* The Plant Genome U G 3**

Study of chromosomal and genomic structure, function, and organization in higher plants.

Au Qtr. 2 1.5-hr cl. Prereq: Mol Gen 500 or Mol Gen 501. Not open to students with credit for Agronomy 635.

**636^\* Mineral Nutrition of Plants U G 3**

Process of uptake, transport, and metabolism of mineral nutrients, with emphasis on nitrogen, and on process at the tissue and cellular level.

Sp Qtr. 2 2-hr cl. Prereq: Biochem 511, Plnt Bio 436 or 630;

**660 Soil Microbiology U G 3**

Diversity of soil microorganisms, their habitats in soil, cycling of major nutrients, transformation of xenobiotics and heavy metal, and microbial colonization of plant roots.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: Soil Sci 442, Micrbiol 509, and Chem 251. Not open to students with credit for Agronomy 660.

**665 Environmental Microbiology U G 3**

The role of microorganisms and underlying biological principles in elemental cycles and degradation of natural and man-made compounds.

Sp Qtr. 3 cl. Prereq: Chem 251 and Micrbiol 509 or 520. Not open to students with credit for Agronomy 665 or Micrbiol 665. Cross-listed in Microbiology.

**H683 Honors Project U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Agr H590.01, enrollment in honors program, and permission of honors supervisor. Repeatable to a maximum of 10 cr hrs. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**693 Individual Studies U G 1-5**

Special problems in crop science, landscape horticulture or turf science, not included in regular courses and involving library, laboratory, or field studies.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Special group studies in the areas of crop science, landscape horticulture, and turf science.

Su, Au, Wi, Sp Qtrs. Prereq: Sr or grad standing. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution**

An opportunity for students to study at a foreign institute and receive Ohio State credit for that work.

Prereq: Written permission of program coordinator. Repeatable to a maximum of 45 cr hrs. Decimal subdivisions not repeatable. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as, travel and subsistence costs.

**697.01 The Constructed Landscape I: British and American Contrasts U G 5**

Preparation for study of constructed landscapes in their geographic and social contexts at Myerscough College England.

Su Qtr. 4 2-hr cl, 2 2-hr labs.

**697.02 The Constructed Landscape II: Evolution of English Landscapes U G 5**

Study of the factors that have shaped landscape horticulture in Britain.  
Su Qtr. Arr.

**697.03 The Constructed Landscape III: Landscape Industry and Operations in Britain U G 5**

Study of the structure and operations of landscape industries in Britain.  
Su Qtr. Arr.

**761 Secondary Products of Higher Plants U G 4**

The biochemistry of secondary products unique to higher plants with emphasis on phenolics, waxes, flavonoids, terpenoids, alkaloids, and related compounds.

Sp Qtr. 2-2-hr cl. Prereq: Biochem 511, Plnt Bio 631 or equiv. Not open to students with credit for Hort 761.

**804 Seminar G 1**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**814 Physiology of Horticultural Plants G 5**

The application of physiological concepts to horticultural plant situations; review of applicable literature.

Au Qtr. 5 cl. Prereq: Plnt Bio 630 and 631. Not open to students with credit for Hort 814.

**822\*\* Physiological and Biochemical Aspects of Herbicides G 5**

Herbicide absorption, course, fate, and mode of action in plants; persistence and fate in soils.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Biochem 631 and Plnt Bio 630 or 631. Not open to students with credit for Agronomy 822. Offered odd years.

**825\*\* Advanced Plant Breeding G 3**

Theory and methods of plant improvement; statistical genetics, methods for self- and cross-fertilizing crops, chromosomal manipulation.

Sp Qtr. 2 1.5-hr cl. Prereq: 625 or Agronomy 625; and Mol Gen 650. Not open to students with credit for Agronomy 825. Offered even years.

**830 Current Topics in Horticulture and Crop Science G 2**

Readings from the current literature will be examined in detail for both technical and conceptual content.

Su, Au, Wi, Sp Qtrs. 1 cl, 1 2-hr discussion. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs.

**832\*\* Plant-Bacteria Interactions G 5**

Bacterial pathogens and symbionts affecting plant health and productivity; molecular, cellular, and environmental determinants of plant-microbe interactions; and successful biological control.

Sp Qtr. 32-hr cl. Prereq: Plnt Pth 600 or Micrbio 520, Mol Gen 501 or Micrbio 581 and Biochem 511; or permission of instructor. Not open to students with credit for Agronomy 832 or Plnt Pth 832. Cross-listed in Plant Pathology. Offered odd years.

**887 Techniques of Experimental Design G 5**

A study of experimental designs and their application to agricultural research.

Wi Qtr. 5 cl. Prereq: Mol Gen 650 or Stat 529, and 10 cr hrs of Horticulture and Crop Science or related subjects at the 400 level or above. Not open to students with credit for Agronomy 887.

**894 Group Studies G 1-5**

Advanced topics in horticulture and crop science.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**993 Individual Studies G 1-5**

Students may select special problems not included in regular courses.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research G 1-18**

Research for thesis or dissertation research only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Human Development and Family Science

135 Campbell Hall, 1787 Neil Avenue, 292-7705

**289 Introductory Field Experience**

Directed observation/participation in prekindergarten programs or community agencies.

Prereq: 2.00 CPHR; written permission of instructor. Open only to students in HDFS or UVC Pre-HDFS CAP code. Application must be filed in dept office the quarter preceding the experience.

**289.01 Introductory Prekindergarten Field Experience U 3**

Directed observation/participation in prekindergarten programs.

Au, Wi, Sp Qtrs. 2 4-hr observations; 1 hr cl. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**294 Group Studies U 2-3,5**

Selected topics in human development and family science.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**360 Family Development U 5**

Dynamics of family interaction over the life cycle; emphasis on developmental, social, and cultural influences on the family experience.

Au, Wi, Sp Qtrs. 2-2-hr cl, 1 hr arr. Prereq: Sociol 101 or Rurl Soc 105. BER/GEC/LAR course.

**361 Introduction to Child Development U 5**

Study of the nature, nurture, and development of children from conception through the beginning school years.

Au, Wi, Sp Qtrs. 2-2 hr cl, 1 hr arr. BER/GEC/LAR course.

**362 Middle Childhood and Adolescence U 4**

Introduces students to the current theory and research on development during the middle childhood and adolescent years.

Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 hr arr.

**363 Infant-Toddler Development U 5**

Examination of the behavior and development of children and issues of care throughout the periods of infancy and toddlerhood.

Au, Sp Qtrs. 2 2-hr cl, 2 hr arr. Prereq: 360, and 361 or 364.

**364 Life Span Human Development U 4**

Survey of human development across the life span directed toward an applied understanding of the individual and forces that shape development.

Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 hr arr. BER/GEC/LAR course.

**365 Practicum in Infant-Toddler Child Care U 5**

Participation in infant-toddler laboratory as a student teacher.

Su, Wi, Sp Qtrs. 8 hrs/wk practicum; 1 1.5-hr seminar. Prereq: 363 and 364. Open to Human Development and Family Science majors only.

**390 Human Ecology Foundations U 3**

The family in the human ecosystem, including human development, textile and clothing products, well-being of individuals and families, and management of resources.

Su, Au, Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: Enrollment in College of Human Ecology or Pre-HEC/or Pre-HDFS.

**461 Guidance of Young Children in Groups U 3**

Application of principles of development to guidance of children in groups; modification of experiences for age level, ability, group, and individual needs.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 361 or 364 or Psych 550 or Ed-T&P 460 or Edu T&L 460.

**464 Constructing a Curriculum Model for Young Children U 3**

In-depth examination of the Campbell Hall curriculum model from theory to practice.

Su, Wi, Sp Qtrs. 3 cl. Prereq: 461; concur: 465.

**465 Day Care Practicum**

Participation in the day care center as a student teacher.

Su, Wi, Sp Qtrs. Prereq: 361 or 364; and 461 or written permission of instructor. Pre-register one quarter in advance in dept office.

**465.01 Preschool/Day Care Practicum U 5**

Application of theory included in 461 and 464. Concur: 464.

2 4-hr labs, 1.5-hr cl. Open only to HDFS child development option students.

**465.02 Child and Family Studies Practicum U 3**

Application of theory included in 461.

1.5-hr cl, 4-hr lab. Open only to HDFS child and family studies option students.

**465.03 Group Care Practicum U 2**

4-hr lab, 1 cl. Open to HDFS majors; open to other Ohio State students with permission of instructor.

**466 Seminar: Human Service Organizations U 3**

Application of principles of family development to program planning; discussion of family needs and design of techniques to assess needs and ways to provide services.

Au, Wi, Sp Qtrs. 2 cl, 1 hr arr. Prereq: 360. Open only to dept majors in family studies option.

**468 Individual and Family Helping Skills U 3**

The study of various strategies and techniques used in working with individuals and families in the context of family service organizations.  
 Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: 360 or 364.

**560 Advanced Family Development U 3**

Explores family development and family relations across the lifespan, primarily from a family systems perspective.  
 Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 360 and jr/sr standing.

**565 Supervised Preschool/Day Care Teaching U 10,12,15**

Guided participation of students in the responsibilities and activities of preschool and day care teachers.  
 Au, Wi, Sp Qtrs. Full-time teacher's schedule. Prereq: 464, 465.01, 4th yr standing in child development option, 2.50 CPHR, and written permission of instructor. Dept application must be filed 2 qtrs in advance.

**570\* Adolescent Development: A Biopsychosocial Perspective U 3**

Comprehensive overview of the biological, psychological, and social development of the adolescent.  
 Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 360, 361, 364 or Psych 550, and jr/sr standing.

**589 Field Work**

Planned professional experience with children, youth, or adults in a community agency/setting.

Au, Wi, Sp Qtrs. Prereq: 466, 4th yr standing, 2.50 CPHR, and written permission of instructor. Dept application must be filed 2 qtrs in advance. Students must enroll in 2 consecutive qtrs of field work. Open only to dept majors in family studies option.

**589.01 Introduction to Field Work U 5,10**

First quarter planned participation in community agency learning roles and responsibilities.

Au, Wi Qtrs. 12 hrs/wk at human service agency, 1 hr cl. Repeatable to a maximum of 10 or hrs.

**589.02 Advanced Field Work U 5**

Second quarter planned participation in community agency with increased responsibility for program development and evaluation.

Wi, Sp Qtrs. 12 hrs/week at human service agency, 1 hr cl. Prereq: 589.01. Repeatable to a maximum of 10 or hrs.

**590 Practicum in Human Development and Family Science Research U 1-5**

Provides students with opportunity to work individually with faculty member on research project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing; Psych 220 or equivalent, and permission of instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

**593 Individual Studies U 1-5**

Problems in various phases of human development and family science chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. H593 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Written permission of instructor and completion of individual study plan form. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

**595 Professional Development U 2**

The professional: performance, role in society, position securement, involvement in organizations, and continuing development.

Su, Au, Wi, Sp Qtrs. 1.5-hr cl. Prereq: 4th year standing in HDFS and completion of a minimum of 20 or hrs in major in dept.

**650 Foundations of Marital and Family Therapy U G 4**

Overview and development of key theories of marriage and family therapy.  
 Au Qtr. 1 3.5-hr cl. Prereq: Permission of instructor.

**660 Children and Their Families Under Stress U G 3**

Examination of normative and developmental stressors and crises that impact on the development of children; implications for practitioners drawn from conceptual frameworks and recent research.

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 360, 364, and jr or higher standing. Not open to students with credit for 666.

**662 Multicultural Programming for Young Children U G 3**

Utilizing a variety of teaching and learning methods, students begin to develop an understanding of and appreciation for the diversity and how it relates to programming for young children.

Sp Qtr. 1 2.5-hr cl.

**663 Infant Development U G 3**

Infant development during first two years of life with special consideration of bases of support for provision of effective care.

Wi Qtr. 1 2-hr cl, 1 2-hr lab arr. Prereq: 363, Psych 550, and Sociol 434.

**665 Parenting U G 3**

Identification and examination of the theoretical approaches applicable to child rearing in families; emphasis on developing practical skills for working with parents and children.

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 360 or Sociol 430; 361, 364, or Psych 550, or equiv with written permission of instructor; or graduate status.

**667 Administration of Agencies Serving Children and Families U G 3**

Study of the administration of day care centers and other family service agencies; topics include program objectives, regulations, program development and evaluation, staff development and training, and budget and funding.

Su Qtr. 1 1.5-hr cl, 1 hr arr. Prereq: 465.01 or 465.02 or equiv and written permission of instructor.

**668 Family, School, and Community Contexts of Adolescence U G 5**

Applying research on adolescent development, parent involvement, and the high school transition to the design of appropriate community action and service.

Au, Sp Qtrs. 1 2.5-hr cl, 6 hrs arr. Prereq: 360, and 361 or 364, and 570, and 665.

**669 Comparing Program Philosophies for Young Children U G 3**

Exploration of a variety of philosophies and resultant practices in caring for and educating young children in day care and pre school situations.

Sp Qtr. 2 1.5-hr cl. Prereq: 464, or permission of instructor, and sr standing or higher.

**670 Adult Developmental Issues G**

A series of courses focusing on issues, attitudes, behaviors and social exchanges pertinent to adult development, including the experience of normal and non normative aging.

**670.01 Adult Development and Aging U G 3**

Examination of change and continuity in human development from young adulthood to very old age using a psycho-social-biological perspective.

Su, Wi Qtrs. 1 2.5-hr cl. Prereq: 360, 364, and jr or higher standing.

**670.02 Human Sexuality U G 3**

Examination of the intellectual, physical, and social-emotional aspects of human sexuality. Focus on how sexual issues impact human development, attitudes, relationships, values, and choices.

Au, Wi Qtrs. 1 2.5-hr cl. Prereq: 360, 364 and jr or higher standing. Graduate students must concurrently register for 1 cr hr of HDFS 793.

**670.03 Courtship and Marriage U G 3**

A comprehensive overview of the process of courtship and marriage.  
 Au Qtr. 1 2.5-hr cl. Prereq: 360, 364 and jr or higher standing.

**670.04 Formal and Informal Support Systems of Older Adults U G 03**

Consideration of issues and problems pertinent to support systems of older adults.

Sp Qtr. 1 2.5-hr cl. Prereq: 360, 364, and jr or higher standing.

**689 Practicum in Human Development and Family Science**

An opportunity for putting professional research and theory into practice by teaching, administrative, and agency experiences under supervision in university or agency settings.

Prereq: 3rd or 4th yr standing, 2.25 CPHR, and written permission of instructor. Application must be approved by instructor the quarter preceding registration.

**689.01 Advanced Child Development Practicum U G 3-5**

Special advanced supervised teaching experience with children ages three to five; emphasis on analysis of relationships among teacher behaviors, child characteristics, environmental factors, and learning outcomes.

Au, Wi, Sp Qtrs. Arr. Prereq: 465.01, 465.02, 465.03, or permission of instructor. Repeatable to a maximum of 8 or hrs.

**689.02 Curriculum Planning and Interdisciplinary Strategies for Serving Moderately, Severely, and Profoundly Delayed Young Children U G 3-5**

Practicum experience for students who are interested in working with young developmentally delayed children and their families in an educational setting.

Wi, Sp Qtrs. Arr. Prereq: 361 or equiv, and Psych 571 or Ed-S&R 651 or Edu PAES 650. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

**689.03 Advanced Family Services Practicum U G 3-5**

Special field experience in family service agencies for students with unique interests, such as hospitalized children or the elderly.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 360 and 466. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

**689.04 Advanced Infant-Toddler Practicum U G 3-5**

Advanced supervised teaching experience with children birth to three years of age.

Su, Au, Wi, Sp Qtrs. 2 hrs lab time weekly/credit hr enrolled. Prereq: 365 or permission of instructor. Repeatable to a maximum of 8 or hrs.

**694 Group Studies U G 2-3,5**

Selected topics in human development and family science.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**695 Seminar in Child and Family Studies**

Review, interpretation, and evaluation of current literature and research in defined areas.

Su, Au, Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: 360, 361, and sr or grad standing.

**695.01 Special Topics in Child Development U G 3**

Special topics seminar with a content focus on child development.

**695.02 Special Topics in Family Development U G 3**

Special topics seminar with a content focus on family development.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable. This course is graded S/U.

**698.02 Foreign U G 1-15**

Repeatable. This course is graded S/U.

**701 Issues and Problems in Human Development and Family Science**

Issues and problems in research, teaching, and professional development in fields of human development and family science.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Jr, sr, or grad standing in hdfs or permission of instructor.

**701.02 Program Development U G 1**

Current issues and trends and methods in the interdisciplinary curricula and instructional resources in the field of human development and family science.

**701.03 Research U G 1**

Current research trends and methods in the interdisciplinary field of human development and family science.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Nutrition and Food Management, Nursing, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children U G 3**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models. Wi Qtr. 1 3-hr cl. Not open to students with credit in 702.01 in any cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues U G 3**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. 1 2-hr cl. Not open to students with credit in 702.02 in any cross-listed areas.

**717.03 Developmental Disabilities U G 3**

Focus on the most pertinent scientific and societal issues of developmental disabilities.

Au Qtr. 1 3-hr cl. Not open to students with credit for 717.03 in any of the cross-listed areas.

**719 Early Intervention Interdisciplinary Team Dynamics G 3**

Interdisciplinary team-taught course with a focus on early intervention/early childhood education services for children birth to three and their families.

Au Qtr. 2.5-hr cl. Prereq: Permission of instructor. Not open to students with credit for Alli Med 719, Edu PAES 719, Nursing 719, or Sph/Hrng 719. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Nursing, and Speech and Hearing Science.

**760 Human Development and Family Science Research Process Analysis U G 3**

Historical overview of research methods and related conceptual issues relevant to study of human development and family science; creative approaches to research problems.

Au Qtr. 1 1.5-hr cl. Prereq: 361 or 363, Psych 550, and Sociol 434 or equiv with written permission of instructor.

**764 Foundations and Issues in Family Science G 4**

Theory, research, and methods used to study family development; individual and family developmental tasks over the life span; personal and social context of family development.

Au Qtr. 1 3-hr cl. Prereq: 360 and 364, or equivalents with written permission of instructor.

**765 Advanced Child Development G 4**

Growth and development of children through adolescence with emphasis on maturation patterns and individual differences.

Wi Qtr. 2.5-hr cl, 2 hrs arr. Prereq: 360, and 361 or Psych 550, or equiv with written permission of instructor.

**770 Professional Issues in Marital and Family Therapy G 4**

A preclinical introduction to the central issues and resources in professional development, including personal growth, legal responsibilities, regulation, ethics, and special areas of practice.

Au Qtr. 3.5-hr. cl.

**771 Cultural Diversity in American Families G 3**

Designed to facilitate an understanding of cultural variations among American families with attention given to theoretical, methodological, and intervention issues.

Wi Qtr. 1 2.5-hr cl. Prereq: 560 or 764 or equiv or permission of instructor.

**793 Individual Studies U G 1-5**

Problems in various phases of human development and family science.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**797 Interdepartmental Seminar U P G 2-4**

Two or more departments may collaborate in presenting seminars in subjects of mutual interests; topics to be announced.

Repeatable to a maximum of 6 cr hrs.

**810 Divorce and Remarriage G 3**

Analysis of research and theory pertaining to the process of marital dissolution, adjustment, and remarriage.

Wi Qtr. 1 3-hr cl. Prereq: 764 and 765 or equiv and permission of instructor, 6 cr hrs in research methods, design, or statistics.

**820 Family Theory G 3**

Explores major theoretical perspectives of the field of family science as well as strategies for developing theory.

Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: 764.

**825 Theories of Development Across the Lifespan G 3**

Examination of foundational theories of human development with an emphasis on evaluating, comparing and contrasting the major theories.

Wi Qtr. 1 2.5-hr cl. Prereq: 764; 765; doctoral standing or permission of instructor.

**840 Seminars in Adolescence**

A series of seminars focusing on human development during adolescence, processes involved in development during this period, the social and family contexts of development.

Prereq: 760, 764, 765; or permission of instructor. One of series will be offered each year.

**840.01 Adolescents and Their Families G 3**

A multidisciplinary analysis of theory and research bearing on the topic of changing parent-child relationships during the period when children are adolescents.

Au Qtr. Repeatable to a maximum of 9 cr hrs.

**840.02 Adolescence: The Differentiation Process and the Social Context G 3**

Comprehensive overview of the differentiation construct's utilization in family theory, research, and clinical practice.

Sp Qtr. 1 2.5-hr cl. Repeatable to a maximum of 9 cr hrs.

**840.03 Adolescence: The Individuation Process in the Context of the Family G 3**

A review and analysis of research on the process of individuation during the developmental period of adolescence in the context of the family.

Wi Qtr. 1 3-hr cl. Repeatable to a maximum of 9 cr hrs.



**850 Measurement and Assessment in the Study of Children and Families G 3**

Examination of measurement techniques, instruments, and methods which are used by family researchers to assess children and families.

Au Qtr. 1 2.5-hr cl. Prereq: 760 and one other research course or permission of instructor.

**851 Practicum in Research G 1-5**

Participation in the research process under the supervision of a faculty member.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 20 cr hrs. A maximum of 5 hrs of 851 may be included in student's program of study. This course is graded S/U.

**852 Practicum in Teaching G 1-5**

Supervised college teaching experience for department graduate students.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**861\* The Family: Middle and Later Years G 3**

The interrelationship and adjustment of families with emphasis on the middle and later years of the life cycle.

Su, Sp Qtrs. 1 2.5-hr cl. Prereq: 764 or equiv with written permission of instructor, and 6 cr hrs in research methods, design, or stat.

**862 Seminar in Human Development and Family Science G 3**

Topics to be announced.

Au, Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: Grad standing in human ec or written permission of instructor; and 6 cr hrs in research methods, design or stats. Repeatable to a maximum of 24 cr hrs.

**863 Infant Caregiving Contexts G 3**

Review and critical analysis of recent theoretical and research literature relevant to the design and evaluation of infant care settings.

Sp Qtr. 1 2.5-hr cl. Prereq: 663 or equiv with permission of instructor, and 6 cr hrs in research methods, design, or stat.

**864 Contemporary Issues in Group Experiences for Young Children G 3**

Identification and examination of current practices in group experiences for children under five; emphasis on current issues, relevant research and theory as related to curriculum.

Sp Qtr. 1 2.5-hr cl. Prereq: 15 cr hrs of child development and/or child psychology, supervised student teaching or experience in nursery schools or day care centers, and 3 cr hrs in research methods, design, or stat.

**865 Play and Development G 3**

Examination of research on play, including development, special populations, and ways of encouraging and studying play.

Au Qtr. 1 2.5-hr cl. Prereq: 765 or equiv grad course in human development or play, or permission of instructor.

**867 Current Trends and Issues in Human Development and Family Science**

An analysis and assessment of the empirical and theoretical literature on selected family science topics.

12.5-hr cl. Prereq: 764 and 765 or equiv; 6 cr hrs in research methods, design or stats, or permission of instructor.

**867.02\* Men in Families G 3**

A developmental analysis and assessment of the empirical and theoretical literature on male role performance in family systems with implications derived for research and social policy.

Sp Qtr. Repeatable to a maximum of 12 cr hrs.

**867.03\* Women in Families G 3**

An analysis and assessment of the theoretical and empirical literature on women's roles in family systems.

Su, Sp Qtrs. Repeatable to a maximum of 12 cr hrs.

**870 Family Systems Assessment G 4**

A survey of issues and techniques used in assessment of families for purposes of research and practice, including issues and design for family therapy research.

Wi Qtr. 3.5-hr cl. Prereq: 760 and 770.

**874 Family Therapy Theory I G 4**

An emphasis on the theoretical orientation of the structural, strategic, MRI, and Milan approaches to family therapy.

Au Qtr. 1 3.5-hr cl. Prereq: 650 or permission of instructor.

**875 Family Therapy Theory II G 4**

An emphasis on the theoretical orientation of the intergenerational, behavioral, experimental and solution-focused approaches to family therapy.

Wi Qtr. 1 3.5-hr cl. Prereq: 650 or permission of instructor.

**876 Marital Therapy Theory G 4**

An emphasis on theoretical approaches, intervention techniques, and basic issues or problems of application for marital therapy.

Sp Qtr. 3.5-hr cl. Prereq: 874 or 875.

**878\* Supervision of Marriage and Family Therapy G 4**

Preparation of Marriage and Family Therapy doctoral students to provide supervision of therapy.

Su Qtr. 1 2-hr cl; 4 hrs. practicum. Prereq: 889 and enrollment in Marriage and Family Therapy Program, or permission of instructor.

**880 Seminar in Marital and Family Therapy G 4**

Topics to be announced.

Su, Wi, Sp Qtrs. 3.5-hr cl. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**881 Research in Marital and Family Therapy G 4**

Explore major design, measurement and analysis strategies for conducting and understanding marital and family therapy research.

Wi Qtr. 1 3.5-hr cl. Prereq: 6 hrs of measurement, design or analysis.

**889 Practicum in Marital and Family Therapy G 1-3**

Supervised practice in marital and family assessment and intervention in the department's marital and family therapy clinic.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**894 Group Studies G 2-3,5**

Selected topics in human development and family science.

Prereq: 6 cr hrs in research methods, design or stat; and stated prereqs for specific topics. Repeatable to a maximum of 10 cr hrs.

**989 Supervised Field Experience in Family Therapy G 1-3**

Supervised practice in marital and family assessment and intervention in an agency setting.

1-5 client contact hrs per week. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**993 Individual Studies G 1-5**

Problems in various phases of human development and family science.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research: Thesis G 1-18**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research: Dissertation G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Human Ecology

350 Campbell Hall, 1787 Neil Avenue, 292-6761

**896 Scholarly Writing in Human Ecology G 2**

Students draft a journal article or research grant proposal, receive advice from faculty on specific techniques, and present their work to peers in this course.

1 2-hr cl. Prereq: One course in research or statistics or the equiv. Concur: One credit of 793. Open only to majors in human ecology. This course is graded S/U.

## Human Nutrition and Food Management

325 Campbell Hall, 1787 Neil Avenue, 292-4485

**210 The Science of Human Nutrition U 5**

Basic principles of biological science involving interactions between nutrients and physiological processes with emphasis on implications for human health.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or equiv. Not open to students with credit for 310. BER/GEC/LAR course.

**230 Introduction to Hospitality Management U 2**

Overview of the hospitality-tourism industry. Introduction to and career exploration of various segments of the hospitality-tourism field.

Au, Sp Qtrs. 2 cl.

**294 Group Studies U 2-3,5**

Selected topics in human nutrition and food management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**310 Fundamentals of Human Nutrition U 5**

Nutrient and food energy needs of the human biological system throughout the life cycle with consideration of socio-psychological factors.

Au, Wi, Sp Qtrs. 5 cl. H310 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Biology 101, 110, 113 or equiv; Chem 101 or 121 and Chem 102 or 122. This course is available for EM credit.

**313^ Food in Different Cultures U 3**

Food practices of selected peoples of the world with consideration of the existing social, cultural, and economic conditions.

3 cl. Prereq: 10 cr hrs of social science.

**314 Fundamentals of Food U 5**

Application of chemical and physical principles to food preparation and use.

Wi Qtr. 3 cl. 2 2-hr lab. Prereq: 10 cr hrs of chem.

**350 Food Production Management U 4**

A study of food science and volume food service equipment as related to food production in quantity.

Au, Sp Qtrs. 3 cl, 3 hr lab. Prereq: Chem 101 and 102, or 121 and 122.

**370 Cost Management and Menu Planning U 5**

A study of the impact of the menu, standardized recipe, forecast, and food purchasing on cost control and food quality. An overview of records related to cost control.

Wi, Sp Qtrs. 3 1.5-hr cl. Prereq: 350, hosp mgt or dietetics or fcs ed food service pre-major, 2.0 CPHR.

**400 Beverage Management U 3**

Discussion of the varieties, merchandising, and management control of alcoholic and non-alcoholic beverages served in the hospitality industry.

Wi Qtr. 2 1.5-hr cl. Prereq: 370.

**415 Issues and Controversies in Nutrition U 3**

An overview of "hot" topics in nutrition with a focus on critical appraisal of the research basis for issues and alternative viewpoints.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 310 or permission of instructor.

**450 Foodservice Sanitation and Safety U 3**

Organization of a program of foodservice and safety.

Sp Qtr. 3 1-hr cl. Prereq: 350 or concur.

**451 Foodservice Facilities Design and Management U 3**

Organization and layout of a foodservice establishment and its management.

Sp Qtr. 2 1.5-hr cl. Prereq: 450.

**504 Principles of Education in Dietetics U 3**

Principles of education related to individuals and groups based on knowledge of nutrition, communication skills, recognition of socioeconomic influences, and familiarity with community resources.

Wi Qtr. 2 1.5-hr cl. Prereq: 310 and 314.

**506 Nutrition: The Life Cycle U 3**

Food and nutrient needs throughout various phases of the life cycle.

Au Qtr. 3-hr cl. Prereq: 310, 504 or equivs with permission of instructor. Not open to students with credit for 406.

**550 Hospitality Management: Introductory Internship U 5**

Planned experience under supervision, in various segments of the hospitality industry.

Su, Au, Wi, Sp Qtrs. Prereq: 350, 370, 460; Acctg 211; 2.00 CPHR, and permission of instructor. Internship application must be filed 2 qtrs in advance.

**560 Hotel Systems I: Hotel Operations U 4**

Introduction to the lodging industry and the hotel as a functioning system.

Au Qtr. 2 2-hr cl. Prereq: 230 and Cptr/Inf 101 or 200 or 201.

**561 Hotel Systems II: Hospitality Managerial Accounting U 4**

An examination of the accounting and financial activities of a lodging establishment.

Wi Qtr. 2 2-hr cl. Prereq: 560, Acct&MIS 201 or 212. The second in a two-course sequence, containing material formerly included in Humn Ntr 560 (now split between Humn Ntr 560 and 561).

**570 Hospitality Management: Advanced Internship U 12**

Planned experience in and entry-level supervisory role within the hospitality industry.

Su, Au, Wi, Sp Qtrs. H570 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 550, permission of instructor, 4th yr standing, and 2.00 CPHR. Internship application must be filed in dept 2 qtrs in advance.

**589 Field Work U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Sr standing in human ec; 2.25 CPHR; written permission of instructor; Acct&MIS 211; Econ 200; and Humn Ntr 350, 370, and 460. Repeatable to a maximum of 15 cr hrs. Registration 2 qtrs before scheduling. This course is graded S/U.

**593 Individual Studies U 1-5**

Problems in various phases of human nutrition and food management chosen for individual study.

Su, Au, Wi, Sp Qtrs. Prereq: Minimum of 6 cr hrs in subject matter of problem with cumulative point-hour ratio of 2.70 or written permission of instructor. Repeatable to a maximum of 10 cr hrs. 1 or more conf. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment. This course is graded S/U.

**595 Professional Development U 2**

Professionalism, ethics, and career alternatives in dietetics, food, or nutrition professions; professional organizations, continuing education, and development; skills to seek and obtain employment.

Au Qtr. 1 2-hr cl. Prereq: Jr standing in humn ntr or permission of instructor.

**596 Advanced Professional Development U 1**

Advanced professional development issues in dietetics: Leadership, marketing, continuing education, licensure, preparation for accredited practice experience/graduate education.

Au Qtr. 1 cl. Prereq: 595. Open only to seniors in dietetics. Required for students applying for dietetic internships. This course is graded S/U.

**610 Advanced Human Nutrition U G 5**

Interrelationships of nutrition and human biological functions.

Au Qtr. 5 cl. Prereq: 310, Biochem 211, and Zoology 232.

**612 Nutrition Therapy**

Current practices of nutritional therapy with emphasis on the biochemical and physiological rationale for dietary modifications.

Students required to take 612.01 and 612.02 in sequence. Open only to dept. majors, except by permission of instructor.

**612.01 Nutrition Therapy I U G 4**

Wi Qtr. 3 cl. 1 2-hr lab. Prereq: 504, 506 and 610.

**612.02 Nutrition Therapy II U G 4**

Sp Qtr. 3 cl., 1 2-hr lab. Prereq: 612.01.

**615 Food Theory and Application U G 5**

Application of experimental methods to problems involved in preparation of foods.

Sp Qtr. 3 cl., 2 3-hr lab. Prereq: 350, Biochem 211, Chem 231 or 241 and 243.

**660 Personnel and Organization U G 4**

Integration of principles of management and learning in the management of hospitality operations; emphasis on management of human resources.

Sp Qtr. 4 1-hr cl. Prereq: 350, Bus-MHR 701.

**661 Special Events Planning and Management U G 4**

Students will be expected to develop a restaurant concept, market it, and execute their plans in a given lab setting. They will be required to conduct pre and post-analysis for performance variance.

Au Qtr. 1 cl, 3 2-hr labs. Prereq: 451, 560, 660. Open only to hospitality management majors. Students will be required to participate in selected minor and major special events. They are expected to work with limited supervision in completing the proposed projects. Final grade will depend on success of the special event as evaluated by the class instructor, guests (consumers) feedback and financial statements.

**662 Principles of Tourism U G 4**

Introduction to the nature of tourism, travel and leisure and their role in the world economy. Why and how consumers make their choice of tourism and leisure destinations.

Sp Qtr. 2 2-hr cl. Prereq: Jr standing, 560, or permission of instructor.

**680 Cases in Hospitality Marketing U G 4**

Application of the principles of marketing to the hospitality industries.

Wi Qtr. 4 cl. Prereq: Bus-Mktg 650.

**690 Workshop U G 4**

Full time for 3 wks. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**694 Group Studies U G 1-5**

Selected topics in human nutrition and food management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable. This course is graded S/U.

**698.02 Foreign U G 1-15**

Repeatable. This course is graded S/U.

**700 Strategies and Issues in Hospitality Management U G 3**

To identify, discuss and develop responses to the major issues in the hospitality industry.

Au, Sp Qtrs. 1 3-hr cl. Prereq: Sr standing and permission of instructor.

**704 Nutrition Programs and Services in the Community U G 3**

Exploration of food and nutrition programs emphasizing goals, target audiences, funding, legislation, and identification of community, state, and national programs.

Sp Qtr. 3 cl, arr observation. Prereq: 504 and 506.

**705 Nutrition and Exercise U 3**

Theoretical and applied framework for making dietary decisions for exercising populations.

Su Qtr. 2 cl, 3-hr lab. Prereq: Advanced coursework in nutrition, physiol and biochem and permission of instructor.

**706 Practicum in Nutrition and Exercise U G 1**

Development of practical skills employed in solving nutritional problems of exercising populations.

Su Qtr. 3-hr lab. Concur: 705.

**708 Nutrition of Persons with Developmental Disabilities U P G 3**

A problem-oriented approach to nutrition of the developmentally disabled population.

Su Qtr. 2 cl, 2 hrs lab. Prereq: 612.01 and 612.02 or equiv.

**710 Physiological Basis for Food Utilization U G 5**

Advanced concepts of human nutrition integrating physiological, biochemical, and nutritional functions relevant to food utilization.

Wi Qtr. 3 1.5-hr cl. Prereq: 610 or equiv.

**713^\* Advanced Food Theory and Application U G 3**

Food theories applied to individual investigations in food preparation, preservation, and storage in the home and volume food service.

Su Qtr. 1 2-hr cl, 1 3-hr lab. Prereq: 615 or equiv.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development & Family Science, Nursing, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children U G 3**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models. 1 3-hr cl. Not open to students with credit in 717.01 in any cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues U G 3**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. 1 2-hr cl. Not open to students with credit in 717.02 in any cross-listed areas.

**717.03 Developmental Disabilities U G 3**

Focus on the most pertinent scientific and societal issues of developmental disabilities.

Au Qtr. 1 3-hr cl. Not open to students with credit for 717.03 in any of the cross-listed areas.

**730 Advanced Food Service Systems Management: Operational Integration U G 3**

Current practices and research in management of food service systems. Sp Qtr. 1 2-hr cl. Prereq: 460.

**738 Graduate Study in Human Nutrition and Food Management G 2**

An introduction to research and scholarship in human nutrition including orientation to research methods and related conceptual issues relevant to the study of nutrition.

Au Qtr. 1 2-hr cl. Prereq: 610; grad standing.

**763 Vitamins and Minerals in Metabolism U G 5**

In-depth treatment of biochemical functions, absorption, transport, utilization, interrelationships and nutritional requirements of the vitamins and minerals in humans and other higher animals.

Sp Qtr. Prereq: 610 or equiv; Biochem 511 or 211 and 212; EEOB 232; Chem 231 or 251 and 252.

**793 Individual Studies U G 2-3,5**

Problems in various phases of human nutrition and food management chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**802 Seminar in Human Nutrition and Food Management**

3 cl. Prereq: Advanced course work in seminar topic. Repeatable to a maximum of 15 cr hrs.

**802.01 Food Management G 3**

Su Qtr. Repeatable to a maximum of 15 cr hrs.

**802.02^\* Advanced topics in Human Nutrition and Food Management G 3**

Su Qtr. Repeatable to a maximum of 15 cr hrs.

**802.03^\* Food G 3**

Wi Qtr. Repeatable to a maximum of 15 cr hrs.

**802.04 Human Nutrition G 3**

Au Qtr. Repeatable to a maximum of 15 cr hrs.

**810 Nutritional Assessment G 3**

Evaluation of methods used to assess human nutritional status.

Sp Qtr. 2 cl. 3 hrs lab Prereq: 710.

**816 Recent Developments in Food G 3**

Analysis of selected topics in food with application to current issues.

Wi Qtr. 1 2-hr cl. Prereq: 615 or equiv.

**830 Advanced Studies in Nutrition**

Advanced concepts in nutrition.

Au, Wi, Sp Qtrs. 3 or 5 cl. Prereq: 610 or Anim Sci 530; Fd Sc&Te 761 and 762; 10 grad cr hrs in physiol. Not open to students with credit for Anim Sci 830 or Fd Sc&Te 830. Cross-listed in Animal Sciences and Food Science and Technology.

**830.01 Energy/Lipids G 5**

Sp Qtr. 5 cl. Prereq: Fd Sc&Te 761.

**830.02 Vitamins/Minerals G 5**

Wi Qtr. 5 cl. Prereq: Humn Ntr 763.

**830.03 Proteins and Amino Acids G 3**

Sp Qtr.

**830.08 Carbohydrates G 3**

Au Qtr.

**832^\* Recent Developments in Food Service Systems Management G 3,5**

Analysis of selected topics in food service systems management with application to current issues.

Su Qtr. 1 2-hr cl. Prereq: 460 and experience in food service management. Repeatable to a maximum of 15 cr hrs.

**894 Group Studies G 2-3,5**

Selected topics in human nutrition and food management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**895 Seminar G 1**

Presentations by students, faculty, and visiting scientists with critical discussion of issues in human nutrition.

Au, Wi Qtrs. Arr. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**898 Interdepartmental Seminar in Nutrition G 1**

A seminar in nutrition and related fields.

Sp Qtr. Repeatable to a maximum of 5 cr hrs. Cross-listed in Animal Sciences, and Food Science and Technology. This course is graded S/U.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

**993 Individual Studies G 2-3,5**

Problems in various phases of human nutrition and food management chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research: Thesis G 1-18**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research: Dissertation G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Humanities, College of

186 University Hall, 230 North Oval Mall, 292-1882

**100 Humanities Survey U 1**

Academic requirements, University procedures, grading system, resources; student rights and responsibilities; overview of Humanities areas of study, Arts and Sciences services.

Au Qtr. H100 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Agr Int 100, Arts Col 100.01 or 100.02, Arts&Sci 100 or 100.01 or 100.02, Bio Sci 100, Engineer 100, MPS Col 100, SBS Col 100, or any decimal subdivision of Univ Col 100. This course is graded S/U.

**294 Group Studies U 1-6**

Interdisciplinary study under the direct auspices of the College of Humanities involving materials of an interdepartmental or intercollegiate nature.

H294 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**489 Research Internship in the Humanities U 1-5**

Intensive research experience in a humanities discipline; individual instruction within a faculty research project; students work as research assistants.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Interdisciplinary study under the direct auspices of the College of Humanities involving materials of an interdepartmental or intercollegiate nature.

Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

## Hungarian

232 Cunz Hall, 1841 Millikin Road, 292-6733

**101 Elementary Hungarian I**

Development of four skills: listening comprehension, speaking, reading, and writing; introduction to Hungarian culture.

Not open to native speakers of this language through regular course enrollment or EM credit; or to students with 3 or more years of study of this language in high school except by permission of dept. GEC for lang course.

**101.51 Individualized Track U 1-5**

Repeatable to a maximum of 5 cr hrs. Students register for and complete 1-5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**102 Elementary Hungarian II**

Further development of the four skills: listening comprehension, speaking, reading, and writing; more work on Hungarian culture.

Not open to native speakers of this language through regular course enrollment or EM credit; or to students with 3 or more years of this language in high school, except by permission of dept. GEC for lang courses.

**102.01 Classroom Track U 5**

Wi Qtr. 2 2-hr cl. Prereq: 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr.

**102.51 Individualized Track U 1-5**

Prereq: 101.01 or 5 cr hrs of 101.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

**103 Intermediate Hungarian I****103.51 Individualized Track U 1-5**

Continuation of 102.51; development of listening comprehension, speaking, reading, and writing, with somewhat more emphasis on listening comprehension and reading.

Prereq: 102.01 or 5 cr hrs of 102.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 5 cr hrs. Students register for and complete 1 to 5 hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 104.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor. GEC for lang course.

## Industrial and Systems Engineering

210 Baker Systems Engineering Building, 1971 Neil Avenue, 292-6239

**311 Manufacturing Engineering U 3**

Fundamentals and interrelationships of the principal manufacturing processes; principles and characteristics illustrated with related laboratory demonstrations.

Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 1-hr lab. Prereq: 2nd yr standing in engineer or written permission of instructor. Safety glasses must be worn in laboratory.

**406 Industrial Quality Control U 3**

Application of probability theory, statistics, and control theory to problems and product inspection and process control; economic evaluation of quality control techniques.

Wi Qtr. 2 cl.

**485 Practical Experience in an Industrial Organization U 2**

To be obtained in some engineering or industrial organization; prior adviser approval and final report required.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Majors in ind eng only. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**500 Introduction to Industrial and Systems Engineering U 3**

Introduction to the industrial engineering curriculum and to the profession; technical writing; completion is required prior to beginning advanced portion of the major.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq or concur: Chem 125, Econ 200, Eng Mech 430 or Mech Eng 430, Math 415 and 568, Physics 133, Psych 100, Stat 426 or 428 and English 367 or equiv. Open to ind eng majors only. GEC 3rd writing course.

**503 Work Physiology and Biomechanics in Work Design U G 3**

Investigations of the physiological and biomechanical aspects of work design; anthropometry, biomechanical analysis, physio-control models, and work rest cycles applied to the workplace.

Au, Sp Qtrs. 2 cl, 1 2-hr lab. Prereq: Stat 427 and 428, and jr standing in ind eng; or permission of chairperson.

**504 Engineering Economic Analysis U G 3**

Economic analysis of engineering projects and methods of operation; the analysis of public investments, and introduction to the analysis of engineering decisions.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 3rd yr standing or concur with 500 or written permission of instructor; and a minimum cumulative pt-hr ratio of 2.00.

**509 Statistical Process Control U 3**

Emphasizes the application of statistical methods to product design, process design and operation, and quality engineering.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 500; Stat 427 and 428, or equiv.

**511 Introduction to Manufacturing Processes U G 3**

Fundamentals and analysis of principal manufacturing processes and relationship between process variables and product properties.

Au Qtr. 3 cl. Prereq: 311 recommended; Eng Mech 220 or 400 or 440, or Mech Eng 410 or 420 or 440.

**H517 Applications of Mathematical Modeling to Materials Processing U 3**

How to develop mathematical models of materials processing.

Sp Qtr. Prereq: Honors standing, Mech Eng 500, Math 415, En Graph 167 or equiv or permission of instructor.

**521 Operations Research I: Simulation of Production Systems U 5**

Emphasizes the creation and use of simulation models for the design and evaluation of production systems.

Au, Wi Qtrs. 3 cl, 1 3-hr lab. Prereq: 500; Stat 427 and 428, or equiv.

**522 Operations Research II: Fundamentals of Linear Optimization with Applications U 3**

Emphasizes the formulation, solution and analysis of linear models to optimize the design of production and service systems and other engineering applications.

Au, Wi Qtrs. 3 cl, 1 1-hr lab arr. Prereq: 500; Math 254, 415, and 568. Computer facilities with Excel.

**523 Operations Research III: Fundamentals of Nonlinear Optimization with Applications U 3**

Emphasizes the formulation, solution, and analysis of nonlinear models to optimize the design of production and service systems and other engineering applications.

Wi, Sp Qtrs. 3 cl, 1 1-hr lab, arr. Prereq: 522; Math 254, 415, 568. Not open to students with credit for 549. Computer facilities with Excel.

**531 Production Systems I: Systems Design U 4**

This course develops the knowledge and skills to design production systems and their workplace components.

Wi, Sp Qtrs. 4 cl, 1 1-hr lab. Prereq: 500.

**532 Production Systems II: Facilities Design U 4**

Principles and practices in the design and analysis of process flows, facilities layouts, and material handling systems for production, service, and storage systems.

Au, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: 521, 522, 523, 531.

**533 Production Systems III: Production Control System Design and Implementation U 4**

Principles and practices of modern production systems control including scheduling, shop floor control, MRP systems, their design and implementation.

Au, Sp Qtrs. 4 cl, 1 1-hr lab arr. Prereq: 504, 521, 522, 523, 531.

**534 Principles of Industrial Engineering U G 4**

A survey of operations methods used in industry including optimization, probability and statistics, waiting line models, quality control, simulation models, and scheduling methods.

Au, Wi Qtrs. 4 cl. Prereq: 3rd yr standing or equiv with written permission of instructor. Not open to students in ind eng.

**573 Cognitive Engineering I U 3**

Introduction to the design of person-machine systems, psychological aspects of human performance, and design of displays and controls; human-computer interaction; human information processing.

Wi, Sp Qtrs. 2 cl, 1 2-hr lab. Prereq: Stat 427 and 428 and jr standing in ind eng or written permission of instructor. Not open to students with credit for 673.

**602 Analysis of Die Casting Processes U G 3**

Fundamental principles underlying the die casting process; integration of cast component design, process requirements and economics.

Wi Qtr. 2 1.5-hr cl. Prereq: Grad or sr standing in Engineering. Cross-listed in Materials Science and Engineering.

**603 Principles of Occupational Biomechanics and Industrial Ergonomics U G 3**

In-depth treatment of occupational biomechanics and industrial ergonomics to provide transition to more advanced research-oriented topics.

Au Qtr. 2.5-hr cl. Not open to students with credit for Ind Eng 503.

**604 Advanced Engineering Economic Analysis U G 3**

Theoretical foundations and advanced topics in economic analysis of engineering projects and operations; economic engineering decisions under certainty and uncertainty.

Wi Qtr. 2 1.5-hr cl. Prereq: 504.

**607 Manufacturing Processes and Simulation U G 4**

Introduction to advanced theory and simulation of manufacturing processes, including machining, casting, forming, and injection molding.

Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 511.

**608 Industrial Practice in Systems Design**

An in-depth systems design project for industrial engineering.

2-qtr sequence, must be taken in consecutive qtrs. GEC 3rd writing course.

**608.01 Industrial Practice in Systems Design I U 4**

Problem formulation, data collection, and exploration of design alternatives for an actual systems engineering problem.

Au, Wi Qtrs. 1 2-hr cl, 2 2-hr lab. Prereq: 532, 533, 509 or concur, 610 or concur. This is a Progress course. 2-qtr sequence, must be taken in consecutive qtrs.

**608.02 Industrial Practice in Systems Design II U 4**

Exploration and selection of design alternatives; justification, recommendation, and written and oral presentation of problems solution.

Wi, Sp Qtrs. 1 2-hr cl, 2 2-hr lab. Prereq: 608.01. This is a Progress course. 2nd of 2-qtr sequence; must be taken in consecutive quarters.

**610 Planning of Engineering Experiments U G 3**

Study of the planning of industrial and research experiments.

Au, Wi Qtrs. 2 1.5-hr cl. Prereq: 522 or written permission of instructor.

**611 Metal Cutting Theory and Practice U G 4**

Analysis and application of machining processes; topics include tool wear, cutting mechanics, heat, surface integrity, and properties of materials.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: Eng Mech 440 or Mech Eng 420 or 440, or equivs.

**614 Automation U G 3**

A survey of mechanization principles and current design practices involved in the automation of manufacturing operations and processes.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 311 or equiv.

**615 Automation Laboratory U 1**

Application of principles of mechanization to manufacturing operations and processes.

Au, Sp Qtrs. Prereq or concur: 614.

**617 Introduction to Modeling of Materials Processing U 3**

Applications of the basic principles of transport phenomena to develop physics based mathematical models of materials processing methods.

Au Qtr. Prereq: Mech Eng 500 and En Graph 167 and Math 415; or equiv; or permission of instructor.

**618 Polymer Processing Fundamentals U G 3**

Applies fundamentals of transport phenomena and polymer constitutive equations to plastics manufacturing.

Wi Qtr. Prereq: Mech Eng 500, Math 415, En Graph 167 or equiv; or permission of instructor.

**620 Computer Application in Industrial Process Control U G 3**

Provides an introduction to evaluation and design of practical industrial control systems with emphasis on real time computer control of discrete processes.

Au, Sp Qtrs. 2 1-hr cl, 1 2-hr lab. Prereq: En Graph 167 or equiv and sr standing in ind eng or permission of instructor.

**621 Introduction to Parametric Design U G 3**

Design of components, assemblies, molds and dies using parametric and feature-based design principles.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 522 or Mech Eng 561 or Weld Eng 600 or grad standing in ind eng, mech eng or the manufacturing systems and engineering program. Not open to students with credit for Mech Eng 621. Cross-listed in Mechanical Engineering.

**622 Tool Engineering U G 4**

Design of tools, jigs, and fixtures. Basic elements of fixture design, such as form, locating points, clamping devices, and the use of standardized parts.

Au Qtr. 2 1.5-hr cl, 1 3-hr lab. Prereq: 311; prereq or concur: Ind Eng/Mech Eng 621. Not open to students with credit for 631 or Mech Eng 622. Cross-listed in Mechanical Engineering.

**623 Machine Tool Control and Programming U G 4**

Provides an introduction to numerically controlled machine tools including principles of operation, programming systems, computer assisted programming, performance characteristics, and applications.

Sp Qtr. 2 1.5-hr cl, 2 3-hr labs. Prereq: Ind Eng/Mech Eng 621 and Ind Eng/Mech Eng 683 or permission of instructor. Not open to students with credit for 605 or Mech Eng 623. Cross-listed in Mechanical Engineering.

**625 Engineering Analysis for Design and Simulation U G 5**

Fundamentals of engineering analysis of heat flow, thermal and residual stresses, and fracture and fatigue with applications to design and simulation in welding and manufacturing.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq: Eng Mech 220 or 400 or 410. Not open to students with credit for Weld Eng 620. Cross-listed with Weld Eng 620.

**640 Engineering Project Management U G 3**

Introduction to project management for engineers. Conception, planning, scheduling, budgeting, leadership, management, tracking, completion of projects. Project management software is introduced and used.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 3rd yr standing in College of Engineering or written permission of instructor.

**662 Introduction to Applied Decision Analysis U G 3**

Introduction to decision analysis and its application; deals with modern utility theory and the application of this theory to engineering decisions under risk.

Au, Wi Qtrs. 2 cl. Prereq: Stat 425 or 427 or 435 or equiv with written permission of instructor.

**666 Net Shape Forming of Automotive Parts U G 4**

Introduces students to fundamentals of Net Shape Manufacturing with emphasis on interaction of materials, design and manufacturing.

Sp Qtr. 2 2-hr lec. Prereqs: 311, Eng Mech 400, Eng Mech 430; at least Rank 3 standing in the College of Engineering. Repeatable to a maximum of 12 cr hrs.

**671 Industrial Accident Prevention and Control U G 3**

Industrial safety practices; OSHA; models of accident phenomena; measurement, inspection, and control of unsafe behavior and conditions; design of loss control programs. Student projects.

Wi Qtr. 2 cl. Prereq: 500 or equiv with written permission of instructor.

**672 Analysis and Design of Workplace Environments U G 4**

Measurement of environmental parameters including noise, heat, gases, particulates, and light, and their effect on human productivity; design of engineering controls; laboratory includes industrial surveys.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: 500 or equiv with written permission of instructor.

**673 Cognitive Engineering G 3**

Methodology for design of person-machine systems; psychological aspects of human performance; design of displays and control, human computer interactions, and human information processing.

Au, Wi Qtrs. 2 cl, 1 2-hr lab. Not open to students with credit for 573.

**680 Introduction to Integrated Production Control Systems U G 3**

Introduction to the design and analysis of integrated production control systems, including master scheduling, materials requirement planning, just-in-time systems, sequencing and scheduling.

Wi Qtr. 2 1.5-hr cl. Prereq: 522 and 523 or equiv.

**682 Design for Manufacturing U G 4**

Principles of CAD/CAM and design for automatic manufacturing and assembly; integration of design and manufacturing; simulation of manufacturing processes.

Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. Prereq: 523 or Mech Eng 561 or grad standing. Not open to students with credit for Mech Eng 582 or 682. Cross-listed in Mechanical Engineering.

**683 CAD/CAM Laboratory for Rapid Design Prototyping U G 3**

Rapid design prototyping using engineering workstations, CAD/CAM software, and table-top CNC milling machines, lathes, and injection molding machine.

Au, Wi, Sp Qtrs. 1 2-hr cl, 1 2-hr lab. Prereq: 523 or Mech Eng 561; or grad standing in ind eng, mech eng or in the manufacturing systems and engineering program. Not open to students with credit for Mech Eng 582 or 683. Cross-listed in Mechanical Engineering.

**689 Senior Laboratory U 3**

Students pursue independent laboratory project of up to two quarters duration; proposals must be approved by a faculty member prior to registration for the course.

Prereq: Sr standing in ind eng. Repeatable to a maximum of 6 cr hrs.

**693 Individual Studies in Industrial Engineering U G 1-6**

Designed to give the advanced students an opportunity to pursue special studies not offered in fixed curricula.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**694 Group Studies in Industrial Engineering U G 1-6**

Advanced topics in the various phases of industrial engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 23 cr hrs.

**700\* Empirical Model Building in Industrial Engineering U G 3**

Study of empirical problems in IE including the use of response surface methodology; topics include empirical strategies related to problems in manufacturing and human factors.

Wi Qtr. 2 1.5-hr cl. Prereq: 610 or Stat 641 or 645 or equiv. Not open to students with credit for 750.03.

**701\* Arbitration of Industrial Engineering Disputes U G 3**

Case studies in the arbitration of technical disputes involving incentive standards, job evaluation, crew size, line balancing, etc.

Wi Qtr. 2 cl. Prereq: 501 or 534 or equiv with written permission of instructor.

**702 Mathematical Programming: Linear G 3**

Convex and concave problems, global solutions, extreme point solutions, degeneracy, the Simplex methods, duality, complementary slackness, sensitivity analysis, parametric programming, and applications.

Au Qtr. 2 1.5-hr cl. Prereq: Math 568 or equiv with written permission of instructor. Not open to students with credit for 830.

**703 Stochastic Processes Used in Systems Engineering I G 3**

Introduction to modeling of stochastic systems, including Poisson processes and Markov chains.

Au Qtr. 2 1.5-hr cl. Prereq: Stat 425 or 427 or 521 or equiv. Not open to students with credit for 843.

**704 Introduction to Discrete System Simulation U G 4**

Introduction to the analysis of systems via discrete computer simulation models, generation of random variables.

Wi Qtr. 2 2-hr cl. Prereq: Stat 426 or 428.

**705 Robotic Applications in Manufacturing U G 3**

Aspects of computer based robots; applications of robots in advanced manufacturing systems; role of learning machines in process automation.

Wi Qtr. Prereq: 620 or written permission of instructor.

**709 Statistical Quality Control and Quality Management Systems P G 3**

Emphasizes the application of modern methods in quality engineering.

Au, Sp Qtrs.

**711 Introduction to Metal Forming U G 3**

Metal forming processes, fundamentals of plastic deformation in metal forming; approximate analysis of metal forming processes.

Sp Qtr. 2 1.5-hr cl. Prereq: 607 or permission of instructor.

**712 Advanced Metal Forming U G 3**

Analysis and design of tooling for industrial hot and cold metal forming processes.

Sp Qtr. 3 cl. Prereq: Metal En 615 or equivalent.

**716 Clinical Ergonomics and Management of Industrial Injuries U G 3**

The multidisciplinary concepts and methods to accelerate return-to-work, enhance worker capability, job analysis, preplacement tests, reduce injury and compliance with the regulations will be emphasized.

Sp Qtr. 2 1.5-hr cl. Prereq: 503 or 603 or permission of instructor.

**717 Practice Oriented Ergonomics U G 3**

The practical and theoretical development of concepts and methodologies to be used for ergonomic evaluation of work will be emphasized with the goal of preventing injuries.

Sp Qtr. 1 3-hr cl. Prereq: 503 or 603 or permission of instructor.

**718 Intermediate Occupational Biomechanics U G 3**

Biomechanics of connective tissues and the principles of rigid and defamable body mechanics for developing analysis tools for evaluating human operators within the work place.

Wi Qtr. 2 1.5-hr cl. Prereq: 603 or permission of instructor.

**719 Advanced Occupational Biomechanics U G 3**

Engineering principles of occupational biomechanics supplemented with biomechanical models of various industrial tasks.

Sp Qtr. 2 1.5-hr cl. Prereq: 718 or permission of instructor.

**720 Computer Applications in Manufacturing Systems U G 3**

Principles of digital computer utilization for the control of manufacturing processes and the design, planning, and control of manufacturing systems are presented.

Wi Qtr. 2 cl, 2 lab hrs. Prereq: 620.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Sp Qtr. 1 2-hr cl. Prereq: CIS 612, Linguistics 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in CIS, Linguistics, Philosophy, Psychology, and Speech and Hearing Science.

**740 Contract Research Management G 2**

Introduction to contract research; marketing and proposals; budgets, accounting, project and group management, quality, and ethics.

Au Qtr. 3 cl. Open only to graduate students in engineering or physical sciences. This course is graded S/U.

**750 Advanced Studies in Industrial Engineering**

Prereq: 4th yr standing and permission of instructor. The student must register for specific classes in areas as indicated below, and may register for more than one at a time.

**750.11 Organization of Industrial Engineering Functions U G 3****757 Industrial Ecology: Production Systems Perspectives U G 3**

Introduction to the principles and methods of life cycle environmentally conscious design, manufacturing, services, supply chain management, refurbishment, and recycling.

Au Qtr. 3 cl. Prereq: Sr standing in College of Engineering or grad standing.

**758 Design, Analysis, and Control of Integrated Manufacturing Systems G 3**

A systematic description of traditional, cellular, and flexible configurations; an integrated view of interacting elements and their design, analysis, and control with examples from industry.

Sp Qtr. Prereq: Stat 425 and 426 or 427 and 428 or 525 or equiv.

**772 Decision Analysis U G 3**

Introduction to Bayesian decision analysis and its applications.

Sp Qtr. Prereq: 662. Not open to students with credit for 862.

**773 Cognitive Engineering: Human Interaction with Intelligent Systems U G 3**

Investigation of topics in cognitive engineering including techniques for aiding human performance, human expertise and human error, cognitive modeling of person-machine systems, and paradigms for human-computer interaction.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 573 and permission of instructor (undergraduates); 673 (graduates).

**774 Human-Computer Interaction in Complex Systems U G 3**

Design of human-computer interfaces for applications such as cockpits, process control rooms, space applications, and information retrieval; students will design an interface for an actual system.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 573 and permission of instructor (undergraduates); 673 (graduates).

**775 Cognitive Engineering Methods: Protocol Analysis and Knowledge Acquisition U G 3**

Class teaches the theory and practice of methods in cognitive engineering, including protocol analysis, knowledge elicitation for intelligent systems, and cognitive task analysis.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 573 and permission of instructor (undergraduates); 673 (graduates).

**H783 Undergraduate Honors Program Research U 1-3**

Honors program students are offered the opportunity to pursue independent project/research. Student presentations and thesis writing included.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in ind eng (or equiv). Students must have a GPA of at least 3.4 and permission of instructor. Repeatable to a maximum of 6 cr hrs.

**802 Operations Research Models and Methods G 3**

Examines many basic OR models including the knapsack, traveling salesman, newsboy, and secretary problems; and random walk and queueing models, algorithmic concepts are discussed.

Wi Qtr. 2 1.5-hr cl. Prereq: 702 and 703. Not open to students with credit for 842.

**814 Stochastic Processes Used in Systems Engineering II G 3**

Additional models of stochastic systems including Markov, renewal, and other stochastic processes.

Au Qtr. 2 1.5-hr cl. Prereq: 703.

**816 Advanced Queuing Theory G 3**

Mathematical analysis and design of waiting line systems emphasizing transient solutions, general arrival and service distributions, and priority queues and networks of queues.

Au Qtr. 2 1.5-hr cl. Prereq: 814 or equiv. Not open to students with cr for 813.

**817 Advanced Seminar Cognitive Engineering G 3**

Advanced seminar on contemporary topics dealing with engineering applications of cognitive psychology, artificial intelligence, and linguistics; topic areas include human-computer interactions, the design of information retrieval systems, and mental models of complex systems.

Au Qtr. 2 cl. Prereq: 673 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**818 Advanced Models in Human Factors Engineering G 3**

Advanced study in applied models used in human factors engineering; topics include models of human error, workload measurement and evaluation, risk acceptance, and performance under work paced and environmental stress.

Au Qtr. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**819 Advanced Topics in Biomedical Ergonomics G 3**

Advanced study of state of the art biomechanical evaluation methods applied to ergonomic problems; topics include hand tool evaluation, low back injury, electro-physiology, and anthropometry.

Wi Qtr. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**820 Human Error and the Human Contribution to System Failures G 3**

Psychology of human error and contribution of human error to disasters in high-risk systems.

Au Qtr. 2 1.5-hr cl. Prereq: 673 or permission of instructor.

**821 Problems in Production Engineering G 3-12**

Advanced work in one or more phases of production engineering involving problems in production design, equipment planning, tool design, and quantity and quality control.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

**822 Seminar in Advanced Topics in Manufacturing G 3**

Seminar will feature speakers from industry; students will prepare reports and oral presentations on various topics.

Sp Qtr. 2 2.5-hr cl. Prereq: Admission to grad program or permission of instructor.

**824 Sequencing and Scheduling G 3**

Survey of sequencing/scheduling problems encountered in management systems emphasizing study of available solution techniques: algebraic, branch-and-bound, heuristics, network analyses, and linear/integer programming.

Wi Qtr. 2 1.5-hr cl. Prereq: 702 or permission of instructor.

**828 Advanced Studies in Plant Design and Materials Handling G 3-12**

Advanced work in one or more special phases of plant design and materials handling, such as group technology and robotics.

Au, Wi, Sp Qtrs. Prereq: 658.

**829 Dynamic Biomechanical Lab Analysis for Occupational Low Back Disorder G 4**

Builds upon theoretical information developed in Ind Eng 819. Provides link between theoretical biodynamic logic and laboratory measurement in assessment of occupational biomechanical issues for occupational low back disorder.

Sp Qtr. 2 cl, 1 4-hr lab. Prereq: 819. Repeatable to a maximum of 8 cr hrs.

**831 Mathematical Programming: Nonlinear G 3**

Conv ex sets, convex functions, saddle point optimality criteria, the Fritz John and Kuhn-Tucker conditions, sensitivity and parametric results, applications, and an introduction to algorithms.

Wi Qtr. 2 cl. Prereq: 702.

**832 Mathematical Programming: Advanced Nonlinear G 3**

Wolfe/Falk duality, conjugate/geometric duality, applications of quality (e.g., geometric programming, quadratic programming, location problems, decomposition).

Sp Qtr. 2 cl. Prereq: 831.

**833 Optimization Methods for Large Systems G 3**

Methods for the solution of large optimization problems including decomposition, generalized linear programs, relaxation methods, and primal and dual hierarchical decompositions.

Sp Qtr. 2 cl. Prereq: 710 or 831 or equiv with written permission of instructor.

**834 Integer Optimization Methods G 3**

Methods used in the solution of applied optimization problems which contain integer variables. Content emphasizes general properties and use of common methods.

Au Qtr. 2 1.5-hr cl. Prereq: 656 or 702 or Math 671 or equiv with written permission of instructor.

**837 Multilevel Systems Theory G 3**

Examination of the structure of hierarchical systems including problems of decomposition and coordination.

Sp Qtr. 2 cl. Prereq: 760 and permission of instructor.

**839 Biodynamic Measurement Tools Used in Research G 4**

Builds upon theoretical information from 819. Links theoretical biodynamic logic and laboratory measurements in assessment of occupational biomechanical issues for measurement tools used in research.

Sp Qtr. 2-hr lec, 4-hr lab. Prereq: 819. Repeatable to a maximum of 8 cr hrs.

**849 Risk Assessment for Musculoskeletal Disorders G 4**

Builds upon theoretical information from 819. Links theoretical biodynamic logic and laboratory measurements in assessment of occupational biomechanical issues for musculoskeletal disorders.

Sp Qtr. 2-hr lec, 4-hr lab. Prereq: 819. Repeatable to a maximum of 8 cr hrs.

**854 Advanced Simulation Design and Experimental Procedure G 3**

Variance reduction, experimental procedures, estimation of the variance at the time series average, comparison and ranking of alternatives, and response surface search methods.

Sp Qtr. 2 1.5-hr cl. Prereq: 554 or 704.

**856\* Advanced Models in Production Plannig G 3**

Advanced study of models in aggregate production planning and other areas of production systems.

Wi Qtr. Prereq: Grad standing in industrial engineering or written permission of instructor. Offered odd years.



**859 Modeling Upper Extremity Cumulative Trauma Disorder G 4**

Builds upon theoretical information from 819. Links theoretical biodynamic logic and laboratory measurements in assessment of occupational biomechanical issues for upper extremity cumulative trauma disorders. Sp Qtr. 2-hr lec, 4-hr lab. Prereq: 819. Repeatable to a maximum of 8 cr hrs.

**863 Dynamic Programming G 3**

Theory, methodology, and application of dynamic programming. Sp Qtr. Prereq: 651 or 710 or equiv with permission of instructor.

**864 Optimization of Dynamic Systems G 3**

Study of theory and methodology for optimum control of dynamic systems (sequential decision systems); included are calculus of variations, Pontryagin Maximum Principle, and associated approaches. Wi Qtr. 2 cl. Prereq: 649 or equiv with written permission of instructor.

**866 Programming and Control Research G 3-12**

Advanced work in the several phases of programming and control theory; consists primarily of application of mathematical methods to the formulation and solution of process programming and control problems. Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

**871 Man-Machine Systems Research G 3-12**

Advanced work in special research topics in man-machine systems. Au, Wi, Sp Qtrs. Prereq: 672 or 673. This course is graded S/U.

**881 Seminar in Industrial Engineering G 2**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**885 Practices in Operations Research G 3**

Application of OR methods in manufacturing, financial, governmental, educational, and service organizations; students work on actual problems of a sponsoring organization and present both oral and written reports. Sp Qtr. 2 1.5-hr cl. Prereq: 802. Not open to students with credit for 844.

**893 Individual Studies G 1-6**

Designed to give advanced graduate students an opportunity to pursue special studies not offered in fixed curricula. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**894 Group Studies G 1-6**

Advanced topics in the various phases of industrial engineering. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced. Su, Au, Wi, Sp Qtrs.

**900 Seminar in Operations Research**

Seminar on research topics in Operations Research designed to prepare PhD students for dissertation research and research careers. Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: PhD standing or permission of instructor, other prereqs vary by topic.

**900.01 Optimization G 3**

Repeatable to a maximum of 15 cr hrs.

**900.02 Probabilistic Models G 3**

Repeatable to a maximum of 15 cr hrs.

**900.03 Simulation and Experimentation G 3**

Repeatable to a maximum of 15 cr hrs.

**900.04 Decision Analysis G 3**

Repeatable to a maximum of 15 cr hrs.

**900.05 Systems Theory G 3**

Repeatable to a maximum of 15 cr hrs.

## Industrial, Interior and Visual Communication Design

380 Hopkins Hall, 128 North Oval Mall, 292-6746

**160 Introduction to Design U 3**

Introduction to the rationale of design and systematic design processes; an overview of the profession of industrial, interior, and visual communication design; an introduction to the department's educational program. Au, Wi Qtrs. 1 cl, 1 2.5-hr cl. VPA Admis Cond course.

**199 Design: Visual Thinking and Problem Solving U 3**

Introduction to drawing and problem solving in the context of design; emphasis on materials, tools, and rapid visualization. Au, Wi, Sp Qtrs. 2 2-hr labs.

**250 Studies in Design U 3**

Studies in specific areas in the field of design, with emphasis on particular aspects of industrial design, visual communication, and interior design problems.

Au, Wi, Sp Qtrs. 2 2-hr labs. Prereq: Permission of instructor.

**251 Basic Design I U 5**

Introduction to the theories, methods, and practices of design with primary emphasis on basic visual languages and visual encoding practices.

Au Qtr. 3 3-hr labs. Prereq: 160, English 110 or equiv, Math 116, and the qualifying exam; and a cumulative pt-hr ratio of 2.00.

**252 Basic Design II U 5**

Application of three-dimensional organizational principles, introduction to visual logic, freehand perspective sketching systems, and basic three-dimensional modeling techniques and materials.

Wi Qtr. 3 3-hr labs. Prereq: 251 or permission of instructor.

**253 Design History U 3**

A history of design as affected by technology, science, and cultural world view.

2 cl, 1 2-hr lec/lab. Prereq: Design major or permission of instructor. Not open to students with credit for 253.03.

**254 Introduction to Materials and Processes for Designers U 3**

An overview of the properties and fabrication principles for materials used in industrial, interior and visual communication design.

Wi Qtr. 2 2-hr cl. Prereq: 251; concur: 252; and permission of instructor.

**258 Basic Typography U 3**

Introduction to the knowledge and skills of typographical design and its corresponding aesthetic, functional, and technological applications and utilizations.

Sp Qtr. 1 2-hr cl, 2 2-hr labs. Open only to majors in visual comm dsgrn and or by permission of instructor.

**262 Basic Design III**

Introductory course for majors in department, unique to each area.

Sp Qtr. 3 3-hr labs. Prereq: 252; or permission by instructor.

**262.02 Basic Visual Communication Design Practices U 5**

Introduction to basic two- and three-dimensional practices in visual communication design; emphasis on systematic method and research techniques.

**262.04 Basic Industrial Design Practices U 5**

Introduction to the fundamentals of industrial design with emphasis on development processes, technical skills, and communication; development of simple exemplary products.

**262.08 Basic Interior Design Practices U 5**

Introduction to three-dimensional spatial organization, basic interior design conceptualization and principles of composition; application of basic human needs and space defining elements.

**294 Group Studies in Design U 1-5**

The investigation of various problems in design.

Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

**460 Intermediate Design I**

Au Qtr. 3 3-hr labs. Prereq: 160, En Graph 121, 122, 204; Dsgn 262, 253, 258, Math 116 or equiv (vis comm major); Art 201 or elective; Stat 135 or 145 or similar course from approved GEC list; and acceptance resulting from portfolio review, or permission of chairperson.

**460.02 Visual Communication Design U 5**

Design and application of graphic elements based on visual imagery in production of visual communications using photographic and handgraphic techniques within frameworks of theories of communication and signs.

**460.04 Industrial Design U 5**

Design of simple products as a means of introducing systematic methods, sketching, model making, human factors, and presentation.

**460.08 Interior Design U 5**

An introduction to conceptual planning, interior organization, interior requirements, and human factors, with emphasis on model making and presentation techniques.

**461 Intermediate Design II**

Wi Qtr. 3 3-hr labs.

**461.02 Visual Communication Design U 5**

Design and application of typographical elements in production of verbal communications using photographic, handgraphic, and computer techniques within frameworks of theories of communication and signs.

Prereq: 460.02.

**461.04 Industrial Design U 5**

Emphasis is placed on the refinement of systematic design methods, visualization, detailing and documentation; students are introduced to team working and client requirements.

Prereq: 460.04 concur: 551.

**461.08 Interior Design U 5**

Introduction to furniture design, exploring material and production characteristics, detailing and full-scale model making, emphasizing man-space-product interface, and special user requirements.

Prereq: 460.08.

**462 Intermediate Design III**

Sp Qtr. 3 3-hr labs.

**462.02 Visual Communication Design U 5**

Integration of typographic and graphic elements based on visual imagery in design and development of two-dimensional visual communications using photographic, handgraphic, and computer techniques.

Prereq: 461.02 and 555; or equiv with written permission of instructor.

**462.04 Industrial Design U 5**

Developing of specialized problem solving approaches to more complex industrial design which emphasizes the refinement of solutions in terms of suitable technology and user consideration.

Prereq: 461.04, 502 and 555; or equiv with written permission of instructor.

**462.08 Interior Design U 5**

Design of specialized interior spaces, introducing space planning and design methodology; emphasis on user interaction and existing space and furniture system analysis.

Prereq: 461.08 and 555.

**501 Conceptual Drawing for Industrial Design U 3**

Principles of creative conceptual drawing and sketching methods used in the design process.

Sp Qtr. 2 3-hr cl. Prereq: 252 and 253; En Graph 121 and 122; or written permission of instructor.

**502 Three Dimensional Design Graphics U 3**

Principles of graphic design for industrial and interior design.

Au Qtr. 2 3-hr cl. Prereq: 262.04, 501 and Art 201.

**511 Visual Communication Hand Graphics U 3**

Advanced laboratory practice in communicating with drawn messages; evaluation and selection of appropriate visual treatments and techniques for print, film, and television.

Au Qtr. 2 3-hr labs. Prereq: 262.02; concur: 460.02.

**514 Graphic Design Production U 3**

Fundamental information on the preparation, administration, and development of printed matter used by the visual communication designer.

Wi Qtr. 3 cl. Prereq: 258, 460.02, and 511; concur 461.02.

**521 Interior Drawing U G 3**

Principles and application of conceptual drawing techniques.

Sp Qtr. 2 3-hr labs. Prereq: 252 and En Graph 122 or Arch 271.

**522 Interior Graphics U G 3**

Application and meaning of light, color, material structures, and surface textures; principles of spatial order systems, correlations and intercommunication of space components, forms, signs, styles.

Sp Qtr. 2 3-hr labs. Prereq: 461.08.

**523 Interior Modeling U G 3**

Principles and practices to represent spatial components and user interaction; communication and simulation of space in 2- and 3-dimensional form.

Au Qtr. 2 3-hr labs. Prereq: 521 or permission of instructor.

**524 Interior Specification U G 3**

Overview and analysis of interior product systems, furniture line market surveys; interior specification and contracting.

Wi Qtr. 2 3-hr labs. Prereq: 660.08 and 4th yr standing in int dsgr.

**551 Industrial Design Manufacturing Materials and Processes U 3**

Overview of the properties and fabrication principles for materials used in visual communication, interior, and industrial design.

Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 460.04, and 501; concur: 461.04.

**552 Design Communication Practices U 3**

An overview of communication methods, techniques, and procedures utilized in the various stages of the design process.

Sp Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 461.02 or 461.04 or 461.08.

**554 Human and Environmental Systems Design U 3**

Overview of the social/behavioral/physical nature of humans and their interaction with the environment as interpreted by the designer.

Au Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 462.02 or 462.04 or 462.08; and 555.

**555 Design Methodology U 3**

Introduction to and application of qualitative and quantitative methodology useful in a problem solving process.

Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 262; concur: 460.02, 460.04, or 460.08; or written permission of instructor.

**603 3D Computer-Aided Design Visualization U G 3**

Application of computer graphics to visualizing the design issues of form, space, color, and the dynamics of human interaction within problems of industrial design.

Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 502 or 523 or equiv; jr, sr, or 1st yr grad standing in dsgr; and written permission of instructor.

**656 Design Professional Practices U G 3**

Investigation of the administrative and legal aspects of the design profession contrasting the private firm with corporate and free-lance types of practice.

1 2-hr cl, 1 1-hr cl. Prereq: Sr standing in interior, ind, or visual comm design major; or written permission of instructor.

**660 Advanced Design I**

Au Qtr. 3 3-hr labs.

**660.02 Visual Communication Design U G 5**

Integration of typographic and graphic elements based on visual imagery in design and development of three-dimensional visual imagery in design and development of three-dimensional visual communication solutions in packaging, exhibit design, or sign systems.

Prereq: 462.02, 552, and 555.

**660.04 Industrial Design U G 5**

Design of products and product systems for complex functions; emphasis is on extending design consideration to include detailing, mock-ups, prototypes, testing and servicing.

Prereq: 462.04, 502, 551, and 555.

**660.08 Interior Design U G 5**

Design of complex interior spaces emphasizing psychological aspects of spatial components, referring to human performance and behavior, detail development and specification of space-creating products.

Prereq: 462.08, 522, 552, and 555.

**661 Advanced Design II**

Wi Qtr. 3 3-hr labs.

**661.02 Visual Communication Design U G 5**

Application of planning and analysis techniques in designing two- or three-dimensional visual communication systems; emphasis on application of visual communication research practices and methodology.

Prereq: 554 and 660.02.

**661.04 Industrial Design U G 5**

Introduction of field research experience and interdisciplinary expertise to the design of products and product systems.

Prereq: 554 and 660.04.

**661.08 Interior Design U G 5**

Design of public environments using an interdisciplinary team approach for conceptualization, documentation, and presentation, emphasizing environmental characteristics, and the physical and psychological functionalism of space.

Prereq: 554 and 660.08.

**662 Advanced Design III**

Sp Qtr. 3 3-hr labs.

**662.02 Visual Communication Design U G 5**

Individual student projects; students are to demonstrate their proficiency and grasp of previous subject matter in a project approved by the instructor; portfolio refinement.

Prereq: 661.02 or equiv with written permission of instructor.

**662.04 Industrial Design U G 5**

Industrial design thesis project; students are to demonstrate their proficiency and grasp of previous subject matter in a project approved by the instructor; portfolio development.

Prereq: 661.04 or equiv with written permission of instructor.

**662.08 Interior Design U G 5**

Interior design thesis project; students are to demonstrate their proficiency, ability to evaluate and solve problems, comprehension of human needs, and environmental concerns; portfolio development.

Prereq: 661.08 or equiv with written permission of instructor.

**671 Photo Graphics U G 3**

An experimental workshop in techniques of manipulating existing images to create new visual ideas, emphasizing individual exploration; discussions and critiques.

Sp Qtr. 2 2-hr labs. Prereq: 461.02 and 514; concur: 462.02.

**673 Interaction and Visual Interface Design U G 4**

Application of visual communication design principles to interactive computer-based presentations of information as practiced in the profession.

Au, Wi Qtrs. 2 2-hr labs. Prereq: 461.02 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

**685 Field Work in Design U G 3-10**

Field application of design in a capacity requiring a close working relationship within a professional environment.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**693 Individual Studies U G 2-5**

Advanced study for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr cl. Prereq: Written permission of chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**750 3-D Computer Modeling Applications for Artists and Designers U G 5**

Advanced techniques and methods using 3-D geometric modeling application programs and techniques to design and synthesize 3-D forms.

Au Qtr. 2 2-hr cl; 1 2-hr lab. Prereq: Written permission of instructor.

**751 Advanced 3-D Computer Modeling Applications for Artists and Designers U G 5**

Illumination and shading application programs and techniques used by artists and designers to represent surface attributes, including color, texture, and reflectance for 3-D model visualizations.

Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 750 and written permission of instructor.

**752 3-D Computer Generated Visualization and Simulation Application for Artists and Designers U G 5**

Advanced topics in computer-generated motion application and script development used by artists and designers to create animating studies and emulations.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 751 and written permission of instructor.

**760 Graduate Design Studio G 5**

Interdisciplinary projects for solving complex design problems; planning, analysis, and implementation of design research, problem definition development, team formulation, and advanced production and presentation methodologies.

Su, Au, Wi, Sp Qtrs. 9 cl. Prereq: 662 or equiv or undergrad ind dsgn degree, and grad standing; or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**780 Design Issues Seminar U G 4**

Analysis of issues and inquiry into topics of relevance to design; group discussions and investigations of events, processes, manifestations and procedures related to design.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**785 Orientation to Graduate Studies in Design U G 4**

Overview of current and future trends in design; introduction to design research and communication methods; faculty interest and research; available resources; requirements of graduate-level study.

Au Qtr. 2 2-hr cl.

**786 Design Research and Inquiry U G 4**

Design as a mode of inquiry, including examination of communication process and models, and emphasizing general problem-solving as a goal-directed, value-laden activity.

Wi Qtr. 2 2-hr cl. Prereq: 785.

**787 Design Planning, Development, and Evaluation U G 4**

Preparation for graduate thesis and project courses with emphasis on concept formulation and evaluation based on communication models and other techniques of design.

Sp Qtr. 2 2-hr cl. Prereq: 786.

**797 Interdepartmental Seminar U G 1-5**

Interdisciplinary knowledge and problems examined and discussed in the context of shared concerns.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**894 Group Studies G 1-5**

Group studies for students in specialized programs.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**950 Research Problems in Design G 3-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs.

**993 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**998 Research in Design: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Integrated Biomedical Science Graduate Program

268 Meiling Hall, 370 West 9th Avenue, 292-0857

**701 Biology of Human Disease I U P G 10**

Presentation of biological mechanisms underlying the development, progression, and responses of the body to human diseases at the biochemical and molecular levels.

Au Qtr. 5 2-hr cl. Prereq: Permission of course coordinator for non-IBGP students.

**702 Biology of Human Disease II U P G 10**

Presentation of biological mechanisms underlying the development, progression, and responses of the body to human diseases at the cellular and tissue levels.

Wi Qtr. 5 2-hr cl. Prereq: Permission of course coordinator for non-IBGP students.

**703 Biology of Human Disease III U P G 10**

Presentation of biological mechanisms underlying the development, progression, and responses of the body to human diseases at the tissue, organ and organ system levels.

Sp Qtr. 5 2-hr cl. Prereq: Permission of course coordinator for non-IBGP students.

**704 Research Problem Solving in Biomedical Science U P G 2**

Students will identify and solve problems in research materials distributed in advance to the class by the Module Leaders from IBGP 701, 702, and 703.

Sp Qtr. 2 cl. Prereq: 701 and 702 or equiv with permission of instructor. This course is graded S/U.

**705 Bioinformatics Applied to Human Disease U P G 1**

Training with computerized bioinformatics packages and electronics sources of genomics information to develop skills for genomics analysis of human diseases.

Wi Qtr. 1 1-hr cl. Prereq: Equivalent of 701 and permission of course coordinator for non-IBGP students. Requires standard personal computers to access web.

**781 Animal Models of Human Disease U P G 1**

Transgenic and knockout mouse technology and examples of models for genetic diseases with each pattern of inheritance.

Wi Qtr. 1 cl. Prereq: IBGP 701 or Mol Gen 701. Cross-listed in Molecular and Cellular Biochemistry.

**793 Individual Studies in Integrated Biomedical Science U P G 1-15**

A research project will be assigned by a faculty member to meet the individual student's educational goals.

Su, Au, Wi, Sp Qtrs. (1-15)-hr labs. Prereq: Permission of course coordinator for non-IBGP students. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**797 Integrated Biomedical Science Graduate Seminar U P G 1**

Faculty, outside speakers, and graduate students will give research presentations on topics in parallel with the course sequence Biology of Human Disease.

Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**805 Research Techniques and Resources G 6**

Survey of research techniques and resources available to investigate and solve problems in research on the biology of human disease.

Su Qtr. 3 hr cl, 3 3-hr labs. Prereq: Permission of instructor.

**999 Research in Integrated Biomedical Science G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. (1-18)-hr labs. Repeatable. This course is graded S/U.

## Internal Medicine

201 Means Hall, 1654 Upham Drive, 293-8589

**793 Individual Studies in Medicine P 6, 12, or 18**

All months, 1 or more months to be elected. Research on a minor problem under faculty supervision in the following specialties of medicine:

Prereq: Permission of instructor.

**793.02 Cardiology P G 1-5,6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.04 Endocrinology P G 1-5,6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.08 Infectious Diseases P G 1-5,6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.10 Pulmonary Diseases P G 1-5,6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.12 Rheumatology P G 1-5,6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**794 Group Studies in Medicine P 6,12,18**

Group studies of special topics in medicine.

Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**797 Interdepartmental Seminars P G 1-5**

Wi Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

B— The Philosophy of Clinical Practice for Bio-Medical Engineers

**850 Seminar in Medicine**

Discussion of pertinent literature and research projects in various subspecialty areas with emphasis on basic science concepts.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**850.01 Allergy G 1-3**

This course is graded S/U.

**850.02 Cardiology G 1-3**

This course is graded S/U.

**850.04 Endocrinology G 1-3**

This course is graded S/U.

**999 Research in Medicine G 1-25**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## International Studies

3086 Derby Hall, 154 North Oval Mall, 292-9657

**201 Introduction to Peace Studies U 5**

The meanings of peace and peacelessness in today's world, varied approaches to peace, contributions of many disciplines and professionals, and the significance of peoples' movements.

Au, Wi, Sp Qtrs. 22-hr cl. H201 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC soc sci organizations and politics course.

**210 Introduction to Western Europe U 5**

Introduction to Western Europe with a particular focus on its political and economic development.

Au Qtr. 2 1.5-hr cl, 1 rec. GEC soc sci human, natural, and economic resources course.

**215 Introduction to Development Studies U 5**

Introduction to the contemporary field of development studies through examination of the developing countries of Asia, Africa, and Latin America.

Au Qtr. 5 cl. GEC soc sci human, natural, and economic resources course.

**230 The Rise and Fall of the Soviet Union U 5**

Survey of the birth, growth, decline, and death of communism in the Soviet Union: land, people, history, politics, social institutions, and culture; conducted by members of several departments.

Au, Wi Qtrs. 5 cl. GEC soc sci organizations and politics course.

**231 Introduction to Eastern Europe since World War II U 5**

Survey of the land, people, history, politics, social institutions, literature, and arts of Eastern Europe since World War II.

Au, Wi Qtrs. 5 cl. GEC soc sci organizations and politics course.

**235 Introduction to China and Japan U 5**

Interdepartmental survey of contemporary Asian civilization; geographic and racial background, historical and cultural heritage, social organizations, economic and political problems, and international relations.

Su, Sp Qtrs. 5 cl. GEC soc sci organizations and politics course.

**240 Introduction to Latin America U 5**

Interdepartmental survey of Latin American societies, anthropology, economics, history, literature, geography, and agriculture.

Sp Qtr. 5 cl. H240 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC soc sci human, natural, and economic resources course.

**245 Introduction to the Modern Middle East U 5**

Interdepartmental survey of the land, people, history, politics, religions, philosophy, social institutions, economic development, literature, and the arts, conducted by members of several departments.

Wi Qtr. 5 cl. GEC soc sci organizations and politics course.

**250 Introduction to Africa U 5**

Interdepartmental survey of the land, people, history, politics, social institutions, economic development, literature, and the arts, conducted by members of several departments.

Su, Au, Wi, Sp Qtrs. 5 cl. GEC soc sci organizations and politics course.

**255 Introduction to Southeast Asia U 5**

Interdisciplinary survey of Southeast Asia; geographic and historical background, linguistic and cultural heritage, and contemporary political and economic development.

5 cl.

**294 Group Studies U 1-5**

Groups of students are offered the opportunity to pursue the interdepartmental study of special topics.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H296 Global Affairs Simulation: Free Trade U 3**

Designed to introduce students to alternative modes of teaching and learning; engages them in a simulation-based analysis of a controversial and consequential global issue.

Sp Qtr. 12-hr cl, arr. Prereq: Freshman or soph standing in an honors program or permission of instructor.

**443 The Analysis and Display of Data U 5**

Analysis of data; introduction to the internet; introduction to techniques in the graphical presentation of data; designed for economics and international studies majors.

Sp Qtr. 2 2-hr cl, lab arr. Prereq: Completion of GEC data analysis requirement. Not open to students with credit for Econ 443. Cross-listed in Economics.

**500 Conceptual Approaches to International Studies U 5**

Exploration of classic and contemporary conceptual approaches to international studies used by anthropologists, economists, geographers, historians, political scientists, and psychologists.

Wi Qtr. 2 2-hr cl. Prereq: 15 cr hrs of course work in one or more relevant disciplines and permission of the instructor. Not open to students with credit for Comp Std 500. Cross-listed in Comparative Studies in the Humanities.

**501 Selected Problems in International Studies U G 5**

Class discussions, with several guest speakers, informal conferences, and a reading and research program arranged to meet the special needs of those enrolled.

Sp Qtr. 2 2-hr cl. H501 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Open only to int stds majors or students with equiv preparation. Repeatable to a maximum of 15 cr hrs.

**531 The City and Culture U G 5**

Introduction to the comparative and cross-cultural study of cities, urban culture, and urbanism.

Wi Qtr. 2 2-hr cl. Prereq: One course in comp std or int stds, or grad standing, or permission of instructor. Not open to students with credit for Comp Sts 531. Cross-listed in Comparative Studies in the Humanities.

**535 Economic Development Processes in Developing Countries U G 5**

Study of major Third World problems using principles of development economics; examines poverty, inequality, unemployment, population growth, resource use and rural development.

Wi Qtr. 2 2-hr cl. Prereq: AED Econ 200 or Econ 200. Not open to students with credit for AED Econ 535 or Econ 650. Cross-listed in Agricultural, Environmental, and Development Economics.

**533 Economic Development of Sub-Saharan Africa U G 5**

Issues shaping economic development and stagnation in contemporary Africa such as population growth, agricultural development, industrialization, trade, structural adjustment and environmental issues.

Sp Qtr. 2 2-hr cl. Prereq: AED Econ 200 or Econ 200. Not open to students with credit for AED Econ 536. Cross-listed in Agricultural, Environmental, and Development Economics.

**536 Latin American Economic Development U G 5**

Public policy and other factors influencing economic growth in Latin America are examined.

Sp Qtr. 2 2.5-hr cl. Prereq: AED Econ 200 or Econ 200 or equiv. Not open to students with credit for AED Econ 538. Cross-listed in Agricultural, Environmental, and Development Economics.

**552 Model United Nations U 5**

Interactive diplomatic simulation of the political processes of the UN system focusing on selected global problems; involves class discussions, group projects, and significant student participation.

Sp Qtr. 2 2-hr cl.

**556 Cooperation and Conflict in the Global Economy U G 5**

The economic, social, and political bases for and responses to increasing global economic integration.

Sp Qtr. 2 2-hr cl. Prereq: Econ 200 and 201 or 400, or equivs. Not open to students with credit for Econ 556. Cross-listed in Economics.

**597 Issues of the Contemporary World**

Prereq: Sr standing. GEC contemporary world courses.

**597.01 Problems and Policies in World Population, Food, and Environment U 5**

Problems related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these problems, especially in low-income countries.

Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr rec. Not open to students with credit for Agr Econ 597.01. Cross-listed in Agricultural Economics.

**597.02 Antarctic Marine Ecology and Policy U 5**

Historical and contemporary evaluation of Antarctic resource management and its scientific basis.

Au, Wi, Sp Qtrs. 3 1.5-hr cl. H597.02 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Nat Res or EEOB 597.02. Cross-listed in Natural Resources and Evolution, Ecology, and Organismal Biology.

**591 Senior Seminar in Peace Studies U 5**

Advanced offering in the peace studies track, providing an opportunity to integrate multi-disciplinary course work and internship experience into a comprehensive overview of peace theory.

2 2-hr cl. Prereq: 201, Geog 200, 25 hrs from list of courses approved for peace studies in International studies.

**545 Contemporary Issues in the Middle East U G 5**

Intensive examination of contemporary issues in the Middle East by applying an interdisciplinary approach.

Sp Qtr. 2 2-hr cl. Prereq: 245 or Jr standing. Not open to students with credit for NELEC 545. Cross-listed in Near Eastern Languages and Cultures.

**589 Student Intern Program in International Studies U 4-16**

Opportunity to gain knowledge of the policy process in an international or government agency.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing with at least a B average, and 25 or hrs in a foreign language. Repeatable to a maximum of 15 cr hrs. Travel and subsistence costs to be borne by the student. This course is graded S/U.

**525 Individual Studies U G 1-10**

Designed to give able students an opportunity to pursue a special course of study not otherwise available to them.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**554 Group Studies U G 3-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**587 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**717 Comparative Education U G 3**

Application of social science theories and methods to international issues of education.

Au Qtr. 1 2.5-hr cl. Prereq: Sr standing and permission of instructor. Not open to students with credit for EDU-P&L 717. Cross-listed in Educational Policy and Leadership.

**H783 Honors Research U 3-5**

Informal conferences to allow full scope of the initiative of the student; a special topic is assigned to each student; the results are tested by papers and a special examination.

Su, Au, Wi, Sp Qtrs. Prereq: Sr standing and 40 cr hrs in the social sciences including 15 cr hrs in courses acceptable for a major in int stds, with a grade of A in at least half of these major courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

## Italian

248 Cunz Hall, 1841 Millikin Road, 292-4938

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence through the 104 level.

**101 Elementary Italian I U 5**

Introduction to Italian; development of skills in speaking, understanding, reading, and writing contemporary Italian.

Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 100.02, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang course. FL Admis Cond course.

**102 Elementary Italian II U 5**

Further development of skills in speaking, understanding, reading, and writing contemporary Italian in a cultural context.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 101 or 100.02. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

**103 Intermediate Italian I U 5**

Development of skills in speaking, understanding, reading, and writing contemporary Italian at a more complex level.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

**104 Intermediate Italian II U 5**

Readings of contemporary literary and nonliterary texts and review of major grammatical structures of Italian.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 103 or 112. Not open to native speakers of this language through regular course enrollment or EM credit or to students with credit for 104.01 or 104.02. Course conducted in Italian. GEC for lang course.

**111 Intensive Intermediate Italian U 5,10**

Intensive course combining content of 103 and 104 to complete the presentation of basic Italian grammar and to provide extensive practice in language skills.

Sp Qtr. 5 2-hr cl. Prereq: 102 or equiv. Not open to students with credit for 104 or 104 decimal subdivisions, or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 or 112 may not register for more than 5 cr hrs. Course intended for students who wish to expedite completion of language requirement. GEC for lang course.

**112 Intensive Italian U 5,10,15**

Elementary and intermediate Italian; intensive drill in forms, syntax, vocabulary, and idiom; reading of short stories and plays in Italian.

Su Qtr. 15 cl. Prereq: Permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, and 103. Students may not register for any other course if they enroll in 112. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in Italian will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. No audit. Enrollment limited to 20 students. GEC for lang course. FL Admis Cond course.

**151 Italian Literature in Cultural Context from the Middle Ages to the Renaissance U 5**

Introduction to social-cultural trends in Italy as reflected in literary texts and other materials from the beginnings to the Renaissance.

Not open to students with credit for 150. Taught in English. GEC arts and hums lit course.

**152 Italian Literature in Cultural Context from the Renaissance to the Present U 5**

Introduction to social-cultural trends in Italy as reflected in literary texts and other materials from the Renaissance to the present.

Not open to students with credit for 150. Taught in English. GEC arts and hums lit course.

**202 Italian Conversation and Composition U 5**

Intensive practice in spoken, idiomatic Italian, and composition based on materials concerning Italian life and culture.

Prereq: 104 or 111, or permission of instructor.

**206 Business Italian U 5**

Four-skill study and practice of general business Italian; introduction to current Italian commerce, business practices, terminology, business-related communication skills.

Prereq: 104 or 111, or permission of instructor.

**221 Masterpieces of the Italian Cinema U 5**

Survey of the Italian cinema from the beginnings to today with special emphasis on neo-realism.

Taught in English. GEC arts and hums VPA course.

**293 Individual Studies U 1-15**

Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**401 Review Grammar and Composition U 5**

Review of Italian grammar; composition on assigned topics and practice in translation.

Prereq: 104 or 111, or permission of instructor.

**402 Intermediate Italian Conversation and Composition U 5**

Vocabulary building, practice in speaking Italian, and composition dealing with various aspects of present-day Italian life.

Prereq: 104 or 111, or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

**420 Thematic Approaches to Modern Italian Literature and Culture U 5**

Study of a major theme in modern Italian culture through analysis and discussion of literary texts, film, and opera; topic varies.

Prereq: 104 or 111, or equiv. Repeatable to a maximum of 15 cr hrs. Conducted in Italian.

**601 Modern Italian Syntax U G 5**

Study of modern Italian syntax with emphasis on review of complex structures and current tendencies in syntactic analysis.

Prereq: 401 or permission of instructor.

**602 Italian Translating U G 5**

Translation from Italian to English and English to Italian of texts from diverse sources; analysis of prose styles and conventions in the two languages.

Prereq: 10 cr hrs of Italian beyond 104 or 111.

**603 Advanced Italian Conversation and Composition U G 5**

Intensive practice in speaking and writing, based on contemporary usage.

Prereq: 401 or 402 or permission of instructor.

**604 Italian Phonology U G 5**

Description and analysis of the phonetic structure of modern Italian; training in auditory and oral aspects of Italian pronunciation.

Prereq: 401 or 402 or permission of instructor.

**621 Dante U G 5**

Introduction to the reading of the Divine Comedy; analysis of major episodes.

Prereq: 10 cr hrs at the 400 level or permission of instructor.

**622 Petrarch and Boccaccio U G 5**

Historical and aesthetic analysis of Petrarch's poetry; Petrarchism as a European phenomenon; literary background of Boccaccio's prose and verse; reading from the Decameron.

Prereq: 10 cr hrs at the 400 level or permission of instructor.

**625 Italian Literature of the Renaissance U G 5**

Readings in works of representative authors of the 15th and 16th centuries such as Leonardo, Michelangelo, Castiglione, Machiavelli, Ariosto, and Tasso.

Prereq: 10 cr hrs in Italian literature at the 400 level or permission of instructor.

**626\*\* Italian Literature of the 17th and 18th Centuries U G 5**

Readings in selected works of Campanella, Marino, Galilei, Metastasio, Vico, Goldoni, Parini, and Alfieri.

Prereq: 10 cr hrs in Italian literature at the 400 level or permission of instructor.

**627 Modern Italian Fiction U G 5**

Modern Italian fiction from 1800 to the present.

Prereq: 10 cr hrs at the 400 level or permission of instructor.

**628\* Modern Italian Poetry U G 5**

Italian poetry from 1800 to the present.

Prereq: 10 cr hrs in Italian literature at the 400 level or permission of instructor.

**693 Individual Studies U G 1-15**

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**722^ Studies in Italian Literature: 14th Century U G 3**

Intensive study of one author, major work, or topic such as historiography, jocose poetry, the Vita Nova; reading in relevant criticism and scholarship.

Prereq: Grad standing or by permission of instructor to srs majoring in Italian with credit for 621, 622, or equiv.

**725 Studies in Italian Literature: 15th and 16th Centuries U G 3**

Intensive study of one author, major work, or topic such as epic poetry, the Courtier, Poliziano; readings in relevant criticism and scholarship.

Prereq: Grad standing or by permission of instructor to srs majoring in Italian with credit for 625 or equiv.

**726^ Studies in Italian Literature: 17th and 18th Centuries U G 3**

Intensive study of one author, major work, or topic such as baroque poetry, Tassoni, Alfieri's theatre; readings in relevant criticism and scholarship.

Prereq: Grad standing or by permission of instructor to srs majoring in Italian with credit for 626 or equiv.

**H783 Honors Research U 3-5**

A program of individual study for undergraduate honors students; includes individual conferences and reports; requires presentation and oral defense of an honors thesis.

Arr. Prereq: 4th yr standing with at least a 3.50 cumulative pt-hr ratio in Italian; written permission of instructor under whose supervision the work is to be completed, and of the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**792\* Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs. Repeatable with permission of dept.

**801 Teaching Italian at the College Level G 5**

Methods and techniques for teaching Italian language at the college level.

Au Qtr. Two wks intensive workshop previous to the beginning of qtr followed by a 2-hr wkly cl. Prereq: Teaching associate in the Dept of French and Italian or permission of instructor. Not open to students with credit for Educ-T&L. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs. Cross-listed in Education Teaching and Learning as 801.02.

**811^ History of the Italian Language: Introduction G 5**

Basic concepts of historical linguistics; the major factors of change in the history of the Italian language from Roman times to the present.

Prereq: MA candidates in Italian, others by permission of instructor.

**830 Seminar in Italian Linguistics G 5**

Detailed exploration of selected topics in Italian linguistics with extensive analysis of Italian language data relevant to the topic.

2-2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**832 Seminar in Italian Literature G 2-5**

2 or 5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**833 Seminar in Italian Literature G 2-5**

Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**885 Introduction to Methods in the History and Criticism of Literature G 5**

Selected readings in basic literary history, criticism, and theory, with practice in the use of standard bibliographical aids to scholarship.

**893 Individual Studies G 1-5**

Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-15**

Investigation of minor problems in the various fields of Italian literature and language.

Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs. Repeatable with permission of dept.

**999 Research in Italian Language or Literature G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Japanese

204 Cunz Hall, 1841 Millikin Road, 292-5816

**101 First Year Japanese I**

Elements of standard colloquial Japanese grammar, with intensive oral and written exercises; introduction to the Japanese writing system (hiragana, katakana, and kanji).

Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study of this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Au Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

**102 First Year Japanese II**

Continuation of 101.

Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond course.

**102.01 Classroom Track U 5**

Wi Qtr. 5 cl. Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

**103 First Year Japanese III**

Continuation of 102.

Not open to students with credit for 103; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

**103.01 Classroom Track U 5**

Sp Qtr. 5 cl. Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**103.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 104. Progress is sequential from one cr hr to the next with a demonstrated proficiency of 80% required for advancement to next level.

**104 Second Year Japanese I**

Continuation of 103, with supplementary reading of selected graded texts.

Prereq: 103.01 or 5 cr hrs of 103.51 or 15 cr hrs of 110, or equiv with written permission of instructor. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

**104.01 Classroom Track U 5**

Au Qtr. 5 cl. This course available for EM credit.

**104.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 crs hrs during the qtr. Progress is sequential from one cr hr to the next with a demonstrated proficiency of 80% required for advancement to the next level.

**110 Intensive First Year Japanese U 5,10,15**

An introductory course with emphasis on basic structure taught through oral-aural drill; hiragana, katakana, and a limited number of kanji; equivalent to 101, 102, and 103.

Su Qtr. Prereq: Permission of instructor. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, 103. Not open to students with maximum allowable credit for 112. Students may not register for any other course if they enroll in 110. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 will enroll for 10 cr hrs. Students with no credit in Japanese will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. FL Admis Cond course. GEC for lang course.

**205 Second Year Japanese II U 5**

Continuation of 104 with a shift in emphasis from the spoken to the written language; reading of selected graded texts, writing, and composition.

Wi Qtr. 5 cl. Prereq: 104 or equiv with written permission of instructor. This course is available for EM credit.

**206 Second Year Japanese III U 5**

Continuation of 205.

Sp Qtr. 5 cl. Prereq: 205 or equiv with written permission of instructor. This course is available for EM credit.

**210 Intensive Second Year Japanese I: Spoken U 5**

First course in the sequence of intensive Japanese courses; organized around a set of videotaped core conversations.

Au Qtr. 5 cl. Prereq: 103 or equiv, or permission of instructor; concur: 211. Not open to students with credit for 104, 111, or 205. Students must register for 210 and 211 concurrently.

**211 Intensive Second Year Japanese II: Written U 5**

Second course in the sequence of intensive Japanese courses; organized around Reading Japanese and a series of genre-specific samples of Japanese as it is written today.

Au Qtr. 5 cl. Prereq: 103 or equiv, or permission of instructor; concur: 210. Not open to students with credit for 104 or 205. Students must register for 210 and 211 concurrently.

**231 Elements of Japanese Culture U 5**

A survey of literature, art, religion, philosophy, and social institutions of the Japanese people from the earliest to the most recent times.

Su, Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums cultures and ideas course.

**251 Japanese Literature in Translation U 5**

Representative masterpieces from Japanese literature: fiction, drama, poetry, prose.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums lit course.

**252 Modern Japanese Literature in Translation U 5**

Modern Japanese literature from late 19th century Western influences to contemporary writers; selected readings in English translation with emphasis on Tanizaki, Kawabata, and Mishima.

Wi, Sp Qtrs. 5 cl. GEC arts and hums lit course.

**293 Individual Studies U 1-5**

Individual investigation of problems in Japanese culture, language, and literature.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**310 Intensive Second-Third Year Japanese I: Spoken U 5**

Third course in the sequence of intensive intermediate Japanese courses; organized around a set of videotaped core conversations.

Wi Qtr. 5 cl. Prereq: 104 and permission of instructor, or 210. Not open to students with credit for 205. Students must register for 310 and 311 concurrently.



**311 Intensive Second-Third Year Japanese II: Written U G 5**

Fourth course in the sequence of intensive intermediate Japanese courses; organized around a set of genre-specific samples of Japanese as it is written today and integrated with 310 in structure and vocabulary.

Wi Qtr. 5 cl. Prereq: 211 or equiv, or permission of instructor; concur: 310. Not open to students with credit for 205. Students must register for 310 and 311 concurrently.

**501 Japanese Literature in Critical Perspective U G 5**

Advanced survey in translation of masterpieces of Japanese literature and introduction to methods for the critical evaluation of the Japanese literary tradition.

Au, Wi, Sp Qtrs. 2 2.5-hr cl. Prereq: 251 or 252 or equiv, or permission of instructor. GEC third writing course.

**507 Third Year Japanese I U G 5**

Readings in modern Japanese aiming at acquisition of control of the 1850 characters in common use; translation, composition, character drill.

Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.

**508 Third Year Japanese II U G 5**

Continuation of 507; supplementary readings in short stories and standard reference works.

Wi Qtr. 5 cl. Prereq: 507 or equiv with written permission of instructor.

**509 Third Year Japanese III U G 5**

Continuation of 508.

Sp Qtr. 5 cl. Prereq: 508 or equiv with written permission of instructor.

**510 Intensive Third Year Japanese I: Spoken U G 5**

Fifth course in the sequence of intensive intermediate spoken Japanese; uses audio, video, and textual materials produced for native consumption.

Sp Qtr. 5 cl. Prereq: 311 or equiv, or permission of instructor; concur: 511. Students must register for 510 and 511 concurrently.

**511 Intensive Third Year Japanese II: Written U G 5**

Sixth course in the sequence of intensive intermediate written Japanese; moves from pedagogically planned texts to genres written today for native consumption.

Sp Qtr. 5 cl. Prereq: 510 or equiv, or permission of instructor; concur: 510. Students must register for 510 and 511 concurrently.

**514 Advanced Japanese Conversation U 3**

Lectures, discussion, reports; extensive use of taped materials including news broadcasts, drama, interviews, informal conversations; conducted entirely in Japanese.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 507 and permission of instructor. Repeatable to a maximum of 9 cr hrs.

**600 Performance Traditions of Japan U G 5**

Introduction to performance traditions of Japan; explores selected performance genres in their cultural contexts and examines patterns of emergence in modern times.

Sp Qtr. 2 2-hr cl. Prereq: 231 or 251 or 252, or Chinese 231 or 251 or 252, or EALL 131, or Korean 231 or 251; or permission of instructor.

**601 Classical Japanese I U G 5**

Classical written language with emphasis on its structure; reading and analysis of selected pre-modern literary texts.

Au Qtr. 5 cl. Prereq: 509 or equiv.

**602 Classical Japanese II U G 5**

Continuation of 601.

Wi Qtr. 5 cl. Prereq: 601 or equiv.

**603 Classical Japanese III U G 5**

Continuation of 602.

Sp Qtr. 5 cl. Prereq: 602 or equiv.

**610 Fourth Year Japanese I U G 5**

Selected readings in modern literary, scholarly, and journalistic Japanese; essentially a language course intended to improve fluency.

Au Qtr. 5 cl. Prereq: 509 or permission of instructor. Not open to students with credit for 661.

**611 Fourth Year Japanese II U G 5**

Continuation of 610.

Wi Qtr. 5 cl. Prereq: 660 or permission of instructor. Not open to students with credit for 662.

**612 Fourth Year Japanese III U G 5**

Continuation of 611.

Sp Qtr. 5 cl. Prereq: 611 or permission of instructor. Not open to students with credit for 663.

**641 The Japanese Religious Tradition U G 5**

A survey of the Japanese tradition, including Shinto, Buddhism, Taoism, Neo-Confucianism, and folk religion from the 6th century B.C.E. to the present.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for Rel Stds 641. Cross-listed in Religious Studies.

**654\* Japanese Literature: Classical Period U G 5**

Survey of Japanese literature from the eighth to the mid-fourteenth century: myths, court poetry, tales, fiction, diaries, and miscellanies.

Au Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.

**655\* Japanese Literature: Medieval and Edo Periods U G 5**

Survey of Japanese literature from the mid-fourteenth to the mid-nineteenth century: popular tales, poetry, drama, and the fiction of the merchant class.

Wi Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.

**656\* Japanese Literature: Modern Period U G 5**

Survey of Japanese poetry, fiction, and drama from the 19th century to the present.

Sp Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.

**680 Introduction to Japanese Linguistics U G 5**

An introduction to the phonology, syntax, and lexicon of the Japanese language.

Au Qtr. Prereq: 103 or 103.01 or 5 cr hrs of 103.51, and Linguist 601; or permission of instructor.

**681 History of the Japanese Language U G 5**

A survey of the development of the Japanese language from early times to the present.

Sp Qtr. Prereq: 103 or 103.01 or 5 cr hrs of 103.51, and Linguist 601; or permission of instructor.

**693 Individual Studies U G 1-5**

Requires the use of Japanese sources and the completion of a paper reflecting the student's research.

Su, Au, Wi, Sp Qtrs. Prereq: 509 or 603, and written permission of instructor. Repeatable to a maximum of 15 cr hrs. Not a substitute for regular language courses. This course is graded S/U.

**694 Group Studies U G 1-5**

Investigation of minor problems in Japanese language and literature.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. Not a substitute for regular language courses.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**710 Fifth Year Japanese I**

Designed to increase rhetorical sensitivity and skill in a variety of genres or present-day Japanese discourse, both spoken and written.

Prereq: 612 or equiv and permission of instructor. Not open to students with credit for 720.

**710.01 Classroom Track G 5**

Au Qtr. 3 cl, 1 3-hr lab.

**710.51 Individualized Track G 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr to the next with a demonstrated proficiency of 80% required for advancement to the next level. The lowest passing grade is B-. Distance-learning course.

**711 Fifth Year Japanese II**

Continuation of 710.

Prereq: 710.01 or 720, or 5 cr hrs of 710.51. Not open to students with credit for 721.

**711.01 Classroom Track G 5**

Wi Qtr. 5 cl or 3 cl and 2 hrs tutorial.

**711.51 Individualized Track G 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr to the next with a demonstrated proficiency of 80% required for advancement to the next level. The lowest passing grade is B-. Distance-learning course.

**712 Fifth Year Japanese III**

Continuation of 711.

Prereq: 711.01 or 721, or 5 cr hrs of 711.51. Not open to students with credit for 722.

**712.01 Classroom Track G 5**

Sp Qtr. 3 cl, 1 3-hr lab.

**712.51 Individualized Track G 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr to the next with a demonstrated proficiency of 80% required for advancement to the next level. The lowest passing grade is B-. Distance-learning course.

**751\* Studies in Japanese Poetry U G 5**

Critical studies in Japanese poetry; survey of poetic forms, techniques, and aesthetics; concentration on a specific collection, poet, or coterie; topic varies.

Au Qtr. 5 cl. Prereq: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**752\* Studies in Japanese Prose Literature U G 5**

History and critical study of myths, early tales, diaries, chronicles, setsuwa, miscellanies, medieval tales, Edo fiction, or the modern novel; topic varies.

Wi Qtr. 5 cl. Prereq: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**753\* Studies in Japanese Drama U G 5**

History and texts of Japan's dramatic literature; no, kyogen, kowaka-mai, bunraku, kabuki, shinsei shimpa, shingeki, rakugo; topic varies.

Sp Qtr. 5 cl. Prereq: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**762\* Japanese Phonology U G 3**

An analysis of the phonological structure of present-day Japanese with a critical examination of traditional and contemporary works on Japanese phonology.

Sp Qtr. 3 cl. Prereq: 680, 681, or permission of instructor.

**H783 Honors Research U 3-5**

A program of reading arranged for each student, with individual conferences, reports, and honor thesis.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a record of A in at least half of the Japanese courses taken and an average of B in all courses; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Open only to candidates for BA in Japanese. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**784 Japanese Syntax U G 5**

Survey of the grammatical structures of Japanese; presentation of syntactic rules.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 680 or permission of instructor.

**786 Japanese Pragmatics U G 5**

Introduction to pragmatic aspects of the Japanese language.

Wi Qtr. 2 2-hr cl. Prereq: 680 or Linguist 601 or permission of instructor.

**788 Japanese Language Acquisition U G 5**

Survey of Japanese language acquisition studies.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 680 or permission of instructor.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

**800 Japanese Bibliography and Research Methods G 5**

Problems and procedures in the use of Japanese bibliographies and other reference materials.

Au Qtr. 2 2.5-hr cl. Prereq: 509 or permission of instructor.

**877 Topics and Problems in Japanese Literature G 3-5**

Readings in the major genres of Japanese literature with emphasis on analysis and critical evaluation.

Sp Qtr. 3 cl. Prereq: 603 or 663, and written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**879 Seminar in Japanese Literature G 3-5**

Au, Wi, Sp Qtrs. Prereq: 603 or 663, and written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**887 Topics and Problems in Japanese Linguistics G 3-5**

A detailed investigation of specific problems in the phonological, syntactical, and lexical analysis of the Japanese language.

Sp Qtr. Prereq: 206 and 680. Repeatable to a maximum of 25 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs. With permission of dept.

**998 Research in Japanese: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research in Japanese: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable. This course is graded S/U.

## Jewish Studies

306 Dulles Hall, 230 West 17th Avenue, 292-0967

**201\* Introduction to Jewish Studies U 5**

An introduction to the historical, ideological, and cultural growth of Judaism examined from a variety of methodological perspectives.

2 2-hr cl. GEC arts and hums cultures and ideas course.

**294 Group Studies U 1-5**

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**489 Jewish Studies Internship U 1-5**

Community work with agencies and organizations serving the Jewish population; evaluation of policy decisions from a Jewish perspective.

Su, Au, Wi, Sp Qtrs. 1 cr hr per 3 hrs per week for 10 weeks at placement agency. Prereq: 201 and 15 cr hrs in Jewish Studies; or permission of instructor. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

**498 Study Tour U 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Su Qtr. Prereq: Permission of instructor. Repeatable.

**613 The American Jewish Experience: Life and Culture G 3,5**

An interdisciplinary approach using history, literature, sociology, and the arts to study about American Jewish life.

Su Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs.

**614 The Holocaust and Holocaust Education G 3**

Examination of historical events and the legacy of some of the fundamental issues raised by the Holocaust; effective approaches for teaching about the Holocaust.

Su Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**692 Workshop U G 1-8**

Prereq: Permission of workshop director. Repeatable to a maximum of 15 cr hrs.

**694 Group Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of Melton Center Director. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

## Journalism and Communication

3016 Derby Hall, 154 North Oval Hall, 292-3400

**101 History of Human Communication U 5**

History of human communication from beginning of spoken and written communication to modern mediated and mass communication.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for Journal 101. SS Admis Cond course. GEC soc sci individuals and groups course.

**200 Communication in Society U 5**

Role of communication in society; forms, strategies, theories and issues; interpersonal, group, organizations, public and mass communication.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for Communic 200 or 317. GEC soc sci individuals and groups course.

**201 Basic Reporting and Newswriting U 4**

Reporting and writing news and features for the print and electronic media. Su, Au, Wi, Sp Qtrs. 4 2-hr cl. Prereq: 101 or Journal 101, or Agr Comm 200; typing ability required. Not open to students with credit for Journal 201 or Agr Comm 200.

**202 Advanced Reporting and Newswriting U 3**

Continuation of 201 with emphasis on more complicated reporting and news writing.

Su, Wi, Sp Qtrs. 1 cl, 2 2-hr labs. Prereq: 201 or Journal 201 and enrollment in journal or agr comm or permission of instructor. Not open to students with credit for Journal 202.

**221 Reporting and Editing for the News Media U 5**

Introduction to, and instruction and practice in newswriting, reporting, and editing for the news media taught in a laboratory setting.

Su, Au, Wi, Sp Qtrs. 1 2-hr lec; 2 2-hr labs. Prereq: 101, 200, and public affairs journalism major.

**240 Living in the Information Age U 5**

Processes of communication technology, critical consumption, ethical issues, current problems of the markets, technologies and policies of online communication, the world wide web, and media.

Su, Au, Wi, Sp Qtrs. 2 2-hr lab/discussion cl, 1 1-hr online self-paced learning. Not open to students with credit for 140 or Communic 140. SS Adms Cond course. This course is web-based. The assignments, reading materials, and syllabi are all available online (<http://jac.sbs.ohio-state.edu/co140wi00>).

**303 Photojournalism U 3**

Reporting the news with a camera; how to recognize, develop, and create picture stories; experience in coordinating words and news pictures; picture editing; layout.

2 cl, 1 2-hr lab. Prereq: 201 or Journal 201 or permission of instructor. Not open to students with credit for Journal 303.

**304 Editing U 3**

Editing of copy, headline writing, rewriting, and general copy desk work.

Au, Wi, Sp Qtrs. 2 cl, 2-hr lab. Prereq: 202 or Journal 202. VDT operation. Not open to students with credit for Journal 304.

**311 Graphics and Visual Communication U 5**

The examination of visual symbols, graphics, photographs, art, movies and video, and their impact on society.

Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs. Prereq: 221 or 367. Not open to students with credit for Journal 311.

**313<sup>A</sup> Public Communication in the Age of Television U 5**

The use of the television medium by political, religious, and occasional advocates with emphasis upon the development of critical standards for viewers.

3 cl, 2 hrs arr. Not open to students with credit for Communic 313.

**320 Introduction to Interpersonal and Organizational Communication U 5**

Survey of basic theories of interpersonal and organizational communication.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: J Com major, or honors student, or permission of instructor.

**324 Interpersonal Communication U 5**

Analysis of dimensions and relationships in interpersonal communication, especially needs, perceptions, orientations, contexts, and barriers; exercises, demonstrations, and applications to students' own experiences.

5 cl. Not open to students with credit for Communic 324.

**331 Communication and the Task-Oriented Group U 5**

The communication processes necessary for small groups to effectively accomplish tasks.

2 2-hr cl. Not open to students with credit for Communic 331.

**335 Organizational Communication U 5**

Major organizational communication concepts and theories; application of theories to organizational communication practices through the use of case studies.

2 2-hr cl. Not open to student with credit for Communic 335.

**340 Introduction to Telecommunication and Electronic Media Technologies and Industries U 5**

Basics of telecommunication and electronic media technologies; evolution and innovation of technologies; markets for new and existing services; U.S. and international dimensions of systems.

2 2-hr cl. Not open to students with credit for Communic 340.

**341 Introduction to Telecommunications and Electronic Media Theories and Policies U 5**

Theoretic bases for understanding telecommunication and electronic media, mechanisms for the formulation and implementation of policy; social impact of media systems.

2 2-hr cl. Not open to students with credit for Communic 341.

**366 Communication and Popular Culture U 5**

An examination from the perspective of communication as a form of popular culture and issues related to the communication of popular culture.

2 2-hr cl. Not open to students with credit for Communic 366.

**367 Persuasive Communication U 5**

Principles of persuasion as reasoned discourse.

Au, Wi, Sp Qtrs. 1 2-hr lec, 3 1-hr rec. Prereq: English 110 or 111 or equiv and soph standing. Not open to students with credit for 305 or 328. GEC second writing course.

**368 Intercultural Communication in Organizational Contexts U 5**

An examination of the role of intercultural communication in organizational contexts and the attendant effects on the creation and transmission of cultural consciousness, knowledge, tradition, and practices.

2 2-hr cl. Not open to students with credit for Communic 368.

**412 Reporting and Writing for Television U 3**

Reporting and editing for the news film medium, writing for the news film and newscast; practice in television news production and newscasting.

2 2-hr cl, lab hr arr. Prereq: 222 or Journal 222 and enrollment in journal. Not open to students with credit for Journal 412.

**421 Journalism Practicum**

Instruction and practice in newswriting, reporting, and editing at a daily news medium; instruction in ethics, management, graphics, photography.

Su, Au, Wi, Sp Qtrs.

**421.01 Beginning Journalism Practicum U 3**

Prereq: 221.

**421.02 Intermediate Journalism Practicum U 3**

Prereq: 421.01.

**421.03 Advanced Journalism Practicum U 4**

2 3-hr labs. Prereq: 421.02.

**431 Public Relations Principles U 3**

Origin and development of public relations, including ethical standards and functional role in modern society; basic principles of public relations theory, philosophy, and operation.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Jr or sr standing. Not open to students with credit for Journal 431.

**460<sup>A</sup> Theories of Communication in Culture and Society U 5**

An examination of communication studies guided by such contemporary theories as psychoanalysis, semiotics, phenomenology, Marxism, and feminism.

22-hr cl. Not open to students with credit for Communic 460. GEC third writing course.

**489 Journalism Field Experience**

An out-of-class supervised field experience for advanced journalism majors.

**489.02 Radio-Television U 3**

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Jr or sr standing and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**489.05 Public Relations Internship U 3**

Au, Wi, Sp Qtrs. Arr cl. Prereq: 202 or Journal 202, and 431 or Journal 431, or permission of instructor. Not open to students with credit for Journal 489.05. This course is graded S/U.

**494 Group Studies U 1-5**

Regular class meetings and group discussion of specified problems.

Su, Au, Wi, Sp Qtrs. Prereq: Soph standing or above. Repeatable to a maximum of 20 cr hrs.

**500 Quantitative Reasoning for Journalism and Communication U 5**

Development of skills for analyzing, evaluating, and reporting news stories with quantitative content.

Wi Qtr. 2 2-hr cl. Prereq: J Com major, or honors student, or permission of instructor.

**512<sup>A</sup> Communication, Images, and Action U G 5**

The interplay between interpersonal communication systems and technologies from a current as well as an historical perspective.

2 2-hr cl. Prereq: Communic major and 15 hrs of Communic of J Com work at the basic-knowledge level, including 350 or Communic 350; or grad standing; or permission of instructor. Not open to students with credit for Communic 512.

**531 Communication and Conflict Management U G 5**

An overview of the communication and conflict literature with emphasis on effective conflict management.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communic 531.

**571 Basic Journalism for Beginning Graduate Students G 5**

Introduction to gathering facts and writing news stories for the media, with attention given to substantive reporting at the local level; libel and fair play.

Au Qtr. 3 cl, 2-2-hr labs. Prereq: Grad standing and permission of instructor. Not open to students with credit for Journal 571. Credit does not apply to the minimum hrs required for grad study in journal.

**602 Magazine Writing U G 5**

Non-fiction writing for magazines, commercial and industrial; emphasis on the non-technical full-length magazine article.

Su Qtr. 2-2-hr cl. Prereq: 221 or permission of instructor. Not open to students with credit for Journal 602.

**604 Ethics of Communication U G 5**

Lectures, discussions, assimilations, and case studies focus on the nature, roles, and functions of ethics in communication in response to major topics and questions.

2-2-hr cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for Communic 604. GEC third writing course.

**606 Development of the Mass Media in America U G 5**

Major currents and trends basic in the shaping of the mass media; famous personalities, foundations, and evolution of a free, responsible press.

Au, Wi, Sp Qtrs. 2-2-hr cl. H606 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Jr, sr, or grad standing in journal; or permission of instructor. Not open to students with credit for Journal 605.

**607 Mass Communication Law U G 5**

History, principles, and provisions of the law of libel, slander, copyright, and other statutes affecting newspapers, other publications, and broadcasting.

2-2-hr cl. H607 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Jr or sr or grad standing in journal; or permission of instructor. Not open to students with credit for Journal 607.

**611 Newspaper Design U G 3**

Application of design techniques to the modern newspaper, emphasis on analysis of contemporary newspaper format and its evolution.

1 3-hr cl. Prereq: 311 or Journal 311 or permission of instructor. Not open to students with credit for Journal 611.

**620 Public Opinion and Communication U G 5**

Investigation of public opinion from social, political, and psychological perspectives, and study of the role communication (including the media) plays in the process.

Au Qtr. 2-2-hr cl. H620 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 620: A beginning social science research methods course or grad standing. Prereq for H620: A beginning social science research methods course and enrollment in an honors program and jr or sr standing, or permission of instructor. Not open to students with credit for Polit Sc 603.

**621 Topics in Public Affairs Journalism U G 5**

Instruction and practice in specified topics pertaining to public affairs, such as government, courts, politics, finance, urban affairs, science, and culture.

Au, Sp Qtrs. 2-2-hr cl, arr off-campus field experiences. Prereq: 421.02 or grad standing in J Com. Not open to students with credit for Journal 621 or 641. Repeatable to a maximum of 15 or hrs.

**622 Reporting Public Affairs for Radio and Television U G 3**

Instruction and practice in reporting the news of government, the courts, politics, education, finance, intergovernmental relations, political public opinion, and urban affairs.

2-2-hr cl, lab arr. Prereq: 422.03 or Journal 623. Not open to students with credit for Journal 622.

**624 Communication in Personal Relationships U G 5**

Advanced level survey of theory and research concerning the role of communication in the development, maintenance, and decay of interpersonal relationships.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, including 324 or Communic 324, or grad standing; or permission of instructor. Not open to students with credit for Communic 624.

**625 Investigative Reporting U G 5**

Intensive instruction in investigative reporting techniques, including Internet research, computer-assisted reporting, public records strategies, advanced story structure, series packaging for print and broadcast, and ethics.

2-2-hr cl, arr off-campus field experiences. Prereq: 621 or Journal 621, or 622 or Journal 622; or permission of instructor. Not open to students with credit for Journal 625.

**627 Advanced Editing**

Advanced theory and practice in news selection, preparation and display for newspaper, magazine, broadcast and photojournalism media; emphasis on the responsibility of the journalist.

Au, Wi, Sp Qtrs. Prereq: J Com 3rd yr standing and permission of instructor.

**627.01 News-Editorial U G 3**

Not open to students with credit for Journal 627.01.

**627.02 Radio-Television U G 3**

Not open to students with credit for Journal 627.02.

**628 Contemporary Persuasion Theory U G 5**

Persuasive campaigns in mass audience settings; persuasion in interpersonal contexts, including organizations, family and personal relationships.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, or grad standing, or permission of the instructor. Not open to students with credit for Communic 628.

**629 Theory and Methods of Discourse Analysis U G 5**

Examination of perspectives on and ways to analyze language use in everyday contexts, discourse in society, implications for communication theory, practice, and competencies.

2-2-hr cl. Prereq: J com major, or honors student, or grad standing, or permission of instructor. Not open to students with credit for Communic 627. GEC third writing course.

**631 Communication in Decision Making U G 5**

Decision-making as a process; comparisons between interpersonal, bargaining-negotiation contexts, and groups and organizations; descriptive and prescriptive models of decision-making in small groups and organizations.

4 cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic knowledge level, including 331 or Communic 331; or grad standing; or permission of the instructor. Not open to students with credit for Communic 631.

**634 Writing for Public Relations Projects U G 3**

Writing and editing for public relations projects; identifying special audiences and tailoring material to their interests; writing for broadcast and print, in-house, and mass media.

2-2-hr cl. Prereq: 202 or Journal 202, and 431 or Journal 431; or permission of instructor. Not open to students with credit for Journal 634.

**635 Topics in Small Group and Organizational Communication U G 5**

Examination of selected topics such as: communication in decision-making, conflict management, effective small group practice, current organizational communication concepts, research, use of communication technologies.

Au Qtr. 2-2-hr cl. Prereq: J Com major, or honors student, or grad standing, or permission of instructor. Not open to students with credit for Communic 631. Repeatable to a maximum of 10 or hrs. Including cr hrs earned in Communic 631.

**636 Health Communication**

Study of the relationship between health care and communication.

2-2-hr cl. Prereq: Communic major and 15 hours of communication or J Com course work at the advanced-knowledge level, grad standing, or permission of instructor.

**636.01 Health communication in Interpersonal Contexts U G 5**

Study of communication relevant to health care in various face-to-face contexts.

Not open to students with credit for Communic 636.01.

**636.02 Health Communication in Mass Mediated Contexts U G 5**

Overview in theory and research into the role of mass media as they affect the public's health behavior.

Not open to students with credit for Communic 636.02.

**637 Public Communication Campaigns U G 5**

Application of management techniques to public relations; public relations strategy; campaign development.

2-2-hr cl. Prereq: J Com major, or honors student, or grad standing, or permission of instructor. Not open to students with credit for Journal 635.

**642 Mass Communication and Society U G 5**

Analysis of basic issues affecting media performance; especially social, cultural norms, organizational and occupational variables, and the assessment of the effects of the resulting performance.

2-2-hr cl. Prereq: Sr or grad standing; or permission of instructor. Not open to students with credit for Journal 642.

**643 International Communication and the World Press U G 5**

Examination of international news communication systems and selected media concepts and the role they play in the political, economic, and cultural environments.

2-2-hr cl. Prereq: Jr or sr or grad standing or permission of instructor. Not open to students with credit for Journal 643.

**644 Advertising and Society U G 5**

Examination of positive and negative contributions of advertising in the American mass media system to society from political, sociological, and economic perspectives.

Prereq: Jr or sr standing. Not open to students with credit for Journal 644.

**646 Media Economics U G 5**

Familiarizes the student with the basic concepts for understanding the economic operation of media organizations and industries.

Au, Sp Qtrs. 2-2-hr cl. Prereq: Econ 200.

**648 History of Cartooning in American Newspapers**

The history of newspaper cartooning in America; assessment of its role and impact.

Wi Qtr. 2-2-hr cl. Prereq: Journal major or grad standing or permission of instructor.

**648.01\* History of American Newspaper Comic Strips U G 5**

History of American newspaper comic strips; assessment of their role and impact.

Not open to students with credit for Journal 648 or 648.01.

**648.02\* History of American Newspaper Political Cartoons U G 5**

Examination of the history, purpose, form, and spirit of American newspaper political cartoons.

Not open to students with credit for Journal 648 or 648.02.

**652 Telecommunication and Electronic Media Policy U G 5**

Survey of telecommunication policy issues; role of the public and industries; FCC, congress, and courts; emphasis on policy issues in broadcasting, cable, satellites, and telephone.

Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, including 340 or Communic 340 or 341 or Communic 341; or grad standing; or permission of instructor. Not open to students with credit for Communic 652.

**653 International Telecommunication and Electronic Media U G 5**

Socioeconomic and geopolitical contexts of national communication systems; management of communication interfaces and common resources; international organizations, legal regimes, and policy.

4 cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, including 340 or Communic 340 or 341 or Communic 341; or grad standing; or permission of instructor. Not open to students with credit for Communic 653.

**654 Social Implications of Telecommunication and Electronic Media Structures U 5**

Advanced study of a current topic in telecommunication and electronic media industry structures.

4 cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, including 652 or Communic 652 or 653 or Communic 653; or grad standing; or permission of instructor. Not open to students with credit for Communic 654.

**657 New Communication Technologies U G 5**

Storage, transmission, and display systems of mediated communication: optical disc, common carriers, telecommunication- computer linkages, and high-definition TV; information industries and society.

4 cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, including 340 or Communic 340 or 341 or Communic 341; or grad standing; or permission of instructor. Not open to students with credit for Communic 657.

**659 Communication Systems and Society U 5**

Advanced study of a current topic in the relationship between telecommunication and electronic media systems and society.

4 cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, including 657 or Communic 657 or 658 or Communic 658; or grad standing; or permission of instructor. Not open to students with credit for Communic 659.

**660 Communication Research Methods U G 5**

Overview of major empirical methods in media research.

Au, Wi, Sp Qtrs. 2-2-hr cl. Prereq: J com major, or honors student, or grad standing, or permission of instructor. Not open to students with credit for 651, or Communic 440 or 651, or Journal 651.

**661 Statistical Applications in Communication U G 5**

Fundamental principles of statistics commonly used in communication research.

Au, Wi, Sp Qtrs. 2-2-hr cl. Prereq: J Com major, or honors student, or grad standing, or permission of instructor. Not open to students with credit for 680 or Communic 680.

**662 Contemporary Perspectives on Communication and Gender U G 5**

Examination of contemporary communication theory, method, and practice relevant to women's communication.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communic 662.

**665 Communication and Community U G 5**

A critical examination of communication linkages for building and maintaining communities.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communic 665.

**666\* Contemporary Perspectives on Communication and Popular Culture U G 5**

Studies of cultural forms and popular communication using advanced communication theories based on semiology, psychoanalysis, phenomenology, Marxist cultural theory, and feminist theory.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communic 666.

**668 Contemporary Perspectives on Intercultural Communication in Organizational Contexts U G 5**

An examination on insights provided by recent communication theories about the challenges and difficulties in organizational communication resulting when people of different cultures interact.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the advanced-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communic 668.

**669\* Communication, Power, and Knowledge U G 5**

An analysis of communication breakdowns within the public sphere, focusing on the concept of distorted communication as it constitutes power and knowledge.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communic 669.

**670 Qualitative Research in Communication Studies: Philosophic Perspectives U G 3**

The philosophic underpinnings of qualitative approaches to scientific inquiry in communication research.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communic 670 or 780.01.

**671 Qualitative Research in Communication Studies: Participant Observation U G 5**

Intensive focus on participant observation as it is practiced in communication studies with emphasis on methodological issues, design, and implementation.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communic 660 or 671.

**672 Qualitative Interviewing as Communication Practice U G 5**

Theories and practices of mediated and face-to-face question-asking as communicative tool for understanding others' views of events, information, policies, systems, technologies.

2-2-hr cl. Prereq: J Com major, or honors student, or grad standing, or permission of instructor. Not open to students with credit for Communic 536 or 672.

**673\* Qualitative Research in Communication Studies: Analyzing Texts and Documents U G 5**

Theory and practice of communicative analysis of social/cultural texts and documents and the records produced by systematic observing and interviewing procedures.

2-2-hr cl. Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communic 667 or 673.

**674\* Qualitative Research in Communication Studies: Deconstructing Communication Theories U G 5**

An uncovering of the ways in which theories of communication incorporate implicit and explicit images, assumptions and practices, using a variety of challenges and perspectives as deconstructing tools.

Prereq: Communic major and 15 hrs of communic or J Com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communic 602 or 674.

**675 Qualitative Research in Communication Studies: Communication Practice, Design, and Policy Lab U G 5**

Qualitative communication research laboratory in which students working in teams conduct a study focusing on a question relating to communication practice, design, or policy.

22-hr cl. or 14-hr cl. Prereq: One of 670 or Communic 670, 671 or Communic 671, 673 or Communic 673, 674 or Communic 674; or grad standing; or permission of instructor. Not open to students with credit for Communic 560 or 675.

**683 Internship in Communication U G 1-5**

On-the-job internships in communication practice or research conducted under supervision of internship coordinator through the undergraduate advising office.

Au, Wi, Sp Qtrs. Prereq: 140 or Communic 140, 240 or Communic 240; Communic major and 15 cr hrs of communic of J Com course work at the basic-knowledge level; CPHR of 2.5; and permission of instructor and communic undergrad advisor; or grad standing. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693 Individual Studies**

Students make extensive and significant studies in the field of journalism. Su, Au, Wi, Sp Qtrs. Prereq: Journal 4th yr standing and permission of director, or grad standing and permission of instructor. No more than 5 cr hrs for undergrad and 6 cr hrs for grad students may be earned in any combination of decimal subdivisions.

**693.01 News-Editorial U G 1-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.02 Radio and Television U G 1-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.03 Photojournalism U G 1-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.04 Magazines U G 1-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.05 Public Relations U G 1-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.06 Communication U G 1-5**

Conference, library, and laboratory work.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Regular class meetings and group discussions of specified problems.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 25 cr hrs.

**697^ Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr cl. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. including cr hrs earned in Communic 697. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Courses repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 6-15**

Repeatable to a maximum of 30 cr hrs.

**711 Design of Online Media Environments U G 5**

Designing sophisticated media environments that integrate multiple media formats; information architecture, user-centered design and usability testing.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Honors student, or grad standing, or permission of instructor. Not open to students with credit for Journal 711.

**712 Producing News for Videotext, Teletext, and Cabledtext U G 3**

Presentation of the techniques of editing, writing, and reporting for electronic publishing.

1 cl, 2 2-hr labs. Prereq: 202 or Journal 202, or 571 or Journal 571, or permission of instructor. Not open to students with credit for Journal 712.

**730^ Communication Dynamics in the Small Group U G 5**

A communicative-based self-analytic study group which utilizes SYMLOG to analyze the communication dynamics within the small group.

3 2-hr cl. Prereq: Communic major and 330 or Communic 330, and 531 or Communic 531; or grad standing; or permission of instructor. Not open to students with credit for Communic 730.

**780 Communication Research Methods**

Predominant research methodologies in the field of communication.

Prereq: Grad standing or permission of instructor.

**780.02 Rhetorical Analysis and Criticism U G 5**

Au Qtr.

**780.03^ Telecommunication and Electronic Media Survey Research Methods U G 5****780.04^ Telecommunication and Electronic Media Policy Research Methods U G 5****H783 Honors Research U 3-15**

A program of independent study for the student with special aptitudes; individual conferences and reports.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the communic or journal or J Com courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**789 Survey Research Practicum G 5**

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

Sp Qtr. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in AED Econ, Agr Educ, Bus-Mktg, Econ, Educ P&L, Geog, Polit Sc, Psych, Pub Hlth, PubPol&M, Sociol, or Stat. Cross-listed in AED Econ, Agr Educ, Bus-Mktg, Econ, Educ P&L, Geog, Polit Sc, Psych, Pub Hlth, PubPol&M, Sociol, or Stat.

**790^ Research Practicum in Communication U G 5**

Survey of research methods and "hands on" experience in conducting a research project.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 25 cr hrs.

A— Critical/Cultural Practicum

B— Interpersonal/Organizational Practicum

C— Rhetoric Practicum

D— Telecommunication and Electronic Media Practicum

**794 Group Studies U G 3**

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**797 Interdepartmental Seminars U P G 3**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**801 Research Methodologies for Journalism and Mass Communication**

Integrated reading and research in the fields of journalism.

Au, Wi, Sp Qtrs.

**801.01 Survey and other Field Methods G 4**

Prereq: 651 or Communic 651 or Journal 651 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**801.02 Experimental Design G 4**

Prereq: 651 or Communic 651 or Journal 651 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**801.03 Content Analysis G 4**

Prereq: 651 or Communic 651 or Journal 651 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**801.04 Legal Methods G 4**

Prereq: 607 or Journal 607 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**801.05 Historical Methods G 4**

Prereq: 606, or Journal 605, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**802 Topics in Journalism and Mass Communication**

Integrated reading and research in the fields of journalism.

Au, Wi, Sp Qtrs.

**802.01 People, Society, and Mass Media G 4**

Prereq: 642 or Journal 642 or permission of instructor.

**802.02 International Communications G 4**

Prereq: 643 or Journal 643 or permission of instructor.

**802.03 Theories of Mass Communication G 4**

Prereq: 651 or Communic 651 or Journal 651 or permission of instructor.

**802.04 Literature and Journalism G 4****802.05 Mass Communication Law G 4**

First Amendment principles through study of legal philosophy; judicial process; and case law affecting freedom of expression in the U.S.

1 3-hr cl. Prereq: 607 or Journal 607 or permission of instructor.

**802.06 Special Topics G 4**

Discussion of current research in journalistic areas of mass communication.

1 3-hr cl. Repeatable to a maximum of 12 cr hrs.



**803 Issues in Journalism**

Integrated reading and research in the fields of journalism.

**803.01 News-Editorial Journalism G 4**

Repeatable to a maximum of 12 cr hrs.

**803.02 Radio/Television Journalism G 4****803.03 Visual Communications G 4****803.05 Public Relations G 4**

Prereq: 431 or Journal 431 or permission of instructor.

**805 Kiplinger Public Affairs Reporting Seminar G 3-5**

Designed to enhance the understanding and public affairs reporting capabilities of persons admitted to the Kiplinger Program.

Au, Wi, Sp Qtrs. Prereq: Admission to the Kiplinger Public Affairs Reporting Program. Repeatable to a maximum of 10 cr hrs.

**806 Introduction to Research and Teaching in Communication G 5**

Introduction to graduate study and research in communication and the teaching of communication; emphasis on both the resources available for research and the skills and problems in teaching communication.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in communic and permission of instructor. Not open to students with credit for Communic 800.

**807 Professional Development in Academia G 5**

Designed to give graduate students in communication the knowledge and skills necessary to be successful in academic careers.

Wi Qtr. 2 2-hr cl. Prereq: 806 or Communic 800. Not open to students with credit for Communic 801.

**811 Seminars in History and Criticism of Public Address G 5**

Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs. Including cr hrs earned in Communic 811.

A— Rhetoric of Social Movements

B— American Culture and Public Communication

C— Communication Ethics

D— Implicate Order of Change

E— Political Communication

F— China and the West

**816 Seminars in Rhetorical Theory G 5**

Prereq: Permission of instructor Repeatable to a maximum of 40 cr hrs. Including cr hrs earned in Communic 816.

A— Classical Rhetorical Theory

B— Medieval

C— Modern and Contemporary

D— Theories of Argument

E— Major Issues in Rhetorical and Communication Theory

F— Rhetoric and Rationality

G— Rhetoric, Fantasy, and Theories of Play

H— Negotiation of Meaning

I— Chinese Rhetoric Theory and Practice

**820 Foundations of Interpersonal and Organizational Communication G 5**

Survey of historical and current trends in theory and research methodology; examination of various approaches to communication research with exemplars.

Sp Qtr. 2 2-hr cl. Prereq: 806 or Communic 800. Not open to students with credit for Communic 820.

**830 Advanced Study in Interpersonal/Organizational Communication G 5**

Au Qtr. Prereq: 820 or permission of instructor. Repeatable to a maximum of 40 cr hrs. Including cr hrs earned in Communic 820; individual topics not repeatable.

A— Survey of Interpersonal Communication

B— Survey of Small Group Communication

C— Survey of Organizational Communication: Micro-Issues

D— Survey of Organizational Communication: Macro-Issues

**840 Foundations of Mass Communication G 5**

Survey of theory and research in mass communication.

Wi Qtr. 2 2-hr cl. Prereq: 806 or Communic 800. Not open to students with credit for Communic 840.

**850 Advanced Study in Telecommunication and Electronic Media G 5**

Wi Qtr. Prereq: 840. Repeatable to a maximum of 40 cr hrs. Including cr hrs earned in Communic 850.

A— Theories of Telecommunication and Electronic Media

B— Telecommunication and Electronic Media Policy

C— New Communications

D— International Telecommunications and Electronic Media

E— Telecommunication and Electronic Media Organization and Industries

**860 Foundations of Discourse Studies in Communication G 5**

A comprehensive introduction to critical/cultural studies of communication and rhetoric.

Sp Qtr. 2 2-hr cl. Prereq: 806 or Communic 800. Not open to students with credit for Communic 860.

**870 Advanced Study in Critical/Cultural Studies in Communication G 5**

Selected topics in communication as addressed by critical/cultural studies approaches.

Prereq: 860 or Communic 860 or permission of instructor.

A— Cultural Studies in Communication

B— Contemporary Marxist Communication Theories

C— Phenomenological Theories of Communication

D— Feminist Scholarship in Communication

E— Semiotics and Communication

**893 Individual Studies in Communication G 1-5**

Graduate students may register for individual study in areas not normally covered by courses, or to supplement credits in existing 800-level courses.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing in communic, permission of instructor, and completion of permission to enroll form. Repeatable to a maximum of 30 cr hrs. Including cr hrs earned in Communic 893. This course is graded S/U.

**894 Group Studies G 3**

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**899^ Interdepartmental Seminar G 3**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

**927^ Theory Construction in Communication G 5**

The formal principles of theory and model construction function as criteria for examining the strengths and weaknesses of four classes of interpersonal communication models.

Prereq: Grad standing or permission of instructor. Not open to students with credit for Communic 927.

**930 Seminars in Interpersonal/Organizational Communication G 5**

Prereq: Appropriate 830 course or permission of instructor. Repeatable to a maximum of 40 cr hrs. Including cr hrs earned in Communic 930.

A— Family Communication (prereq: 830A)

B— Topics in Interpersonal Communication Competence (prereq: 830A)

C— Social Cognition and Communication (prereq: 830A)

D— Language and Conversation (prereq: 830A)

E— Conflict, Negotiation, and Bargaining (prereq: 830A B or C)

F— Communication Issues in Organizational Assimilation (prereq: 830C)

G— Communication Structure and Network Analysis (prereq: 830D)

H— Communication and Change in the Organization (prereq: 830C or D)

I— Communication and Organizational Culture (prereq: 830C or D)

J— Organizational Communication and Authority (prereq: 830C or D)

K— Communication Between Adults and Children (prereq: 830A)

L— Communication in Small Groups (prereq: 830B)

**950 Seminars in Telecommunication and Electronic Media G 5**

Prereq: Corresponding topic in 850 or permission of instructor. Repeatable to a maximum of 40 cr hrs. Including cr hrs earned in Communic 950.

A— Theories of Telecommunication and Electronic Media

B— Telecommunication and Electronic Media Policy

C— New Communication Technologies

D— International Telecommunication and Electronic Media

E— Telecommunication and Electronic Media Organizations and Industries

**970 Seminars in Critical/Cultural Studies in Communication G 5**

Seminars in selected topics in critical/cultural studies in communication.

Prereq: Grad standing. Repeatable to a maximum of 40 cr hrs. Including cr hrs earned in Communic 970.

A— Popular Culture and Communication

B— Cross-Cultural Communication

C— Third World Communication

D— Gender and Communication

E— Communication and Community

F— Health Communication

**998 Research: Thesis**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs.

**998.01 Research in Journalism G 1-18**

Repeatable. This course is graded S/U.

**998.02 Communication G 1-18**

Repeatable. This course is graded S/U.



**999 Research in Communication: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Korean**

204 Cunz Hall, 1841 Millikin Road, 292-5816

**101 First Year Korean I U 5**

Standard modern Korean: development of listening, speaking skills; basic grammar, reading and writing of the Korean script (hangul).

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. FL Admis Cond course. GEC for lang course.

**102 First Year Korean II U 5**

Continuation of 101.

Wi Qtr. 5 cl. Prereq: 101 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. FL Admis Cond course. GEC for lang course.

**103 First Year Korean III U 5**

Continuation of 102.

5 cl. Prereq: 102 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

**104 Second Year Korean I U 5**

Continuation of 103.

Su, Au Qtrs. 5 cl. Prereq: 103 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

**111 Intensive Korean Quarter U 5,10**

An intensive course combining the content of 103 and 104.

Sp Qtr. 5 2-hr cl. Prereq: 102 or equiv. Not open to students with credit for 104. Equiv to 3rd and 4th courses in foreign language sequence; successful completion of 101, 102, 111 fulfills ASC foreign lang requirement. Students with credit for 103 may not register for more than 5 cr hrs. GEC for lang course.

**205 Second Year Korean II U 5**

Continuation of 104; designed to provide further acquisition of language skills in speaking, aural comprehension, reading, and writing.

Au Qtr. 5 cl. Prereq: 104 or 111 or equiv.

**206 Second Year Korean III U 5**

Continuation of 205; designed to provide further acquisition of language skills in speaking, aural comprehension, reading, and writing.

Wi Qtr. 5 cl. Prereq: 205 or equiv.

**231 Elements of Korean Culture U 5**

A survey of the religion, customs, performing arts, fine arts, literature, and social institutions of the Korean people from the earliest era to the present.

Sp Qtr. 5 cl. Taught in English. GEC arts and hums cultures and ideas course.

**251 Korean Literature in Translation U 5**

A close examination of masterpieces in Korean literature across different genres.

Wi, Sp Qtrs. 5 cl. No knowledge of the Korean language is required; all reading materials are in English. GEC arts and hums lit course.

**507 Third Year Korean I U G 5**

Readings in modern Korean, aiming at expansion of vocabulary, acquisition of Chinese characters; translation, composition, and grammar drill.

Au Qtr. 5 cl. Prereq: 206 or equiv.

**508 Third Year Korean II U G 5**

Continuation of 507.

Wi Qtr. 5 cl. Prereq: 507 or equiv.

**509 Third Year Korean III U G 5**

Continuation of 508.

Sp Qtr. 5 cl. Prereq: 508 or equiv.

**514 Advanced Reading, Composition, and Conversation in Korean U G 5**

Practical application of the third-year level Korean language through the combined practice in reading, composition, and discussion.

5 1-hr cl. Prereq: 2nd yr Korean or equiv.

**600 Performance Traditions of Korea U G 5**

Cross-cultural and interdisciplinary exploration of cultural expressiveness in the context of Korean performance traditions; includes guided research, field work, and performance workshop.

Sp Qtr. 2 2-hr cl. Prereq: 231 or 251, or Chinese 231 or 251 or 252, or EALL 131, or Japanese 231 or 251 or 252; or permission of instructor.

**645 Studies in Korean-American Literature U G 5**

Critical study of Korean-American literature and literary genres of the twentieth century, with particular attention to historical, social and cultural contexts.

Au Qtr. 2 2-hr cl. Prereq: 10 cr hrs in literature or grad standing or permission of instructor. Not open to students with credit for Comp Std 645. Cross-listed in Comparative Studies in the Humanities.

**654 Korean Literary Traditions U G 5**

Analysis of the development of Korean literary traditions and their significance in the cultural and intellectual evolution of Korean society and its people.

Sp Qtr. 2 2-hr cl. Prereq: 231 or 251 or equiv. No knowledge of the Korean language is required. All reading materials in English.

**Landscape Architecture**

109 Brown Hall, 190 West 17th Avenue, 292-1012

**100 Landscape Architecture Survey U 1**

Introduction to the University, the Knowlton School of Architecture and the professions of architecture, city and regional planning and landscape architecture.

Au, Wi, Sp Qtrs. 2 cl. Cross-listed in Architecture.

**151 Landscape Architectural Design I U 5**

Introduction to basic design: problem solving techniques; language of design; exploration of space and object through graphic exercises, drawings and models.

9 lab hrs. Not open to students with credit for Arch 202. Cross-listed in Architecture as 202.

**200 Outlines of Landscape Architecture U 3**

Introduction to the discipline of landscape architecture and architecture through the analysis of the built environment, concepts and themes in design, focusing on historical examples.

3 cl. Not open to students with credit for Arch 200. Cross-listed in Architecture. VPA Admis Cond course.

**201 Historical Overview of Human Design on the Land U 5**

Efforts of individuals and societies to control and shape the environment from earliest times to present.

Au Qtr. 5 cl. SS Admis Cond course. BER/GEC/LAR course.

**204 Design of Gardens and Small Properties I U 5**

Design of small-scale residential projects; master planning, use of plants and architectural materials, graphics.

2 cl, 4 lab hrs. VPA Admis Cond course.

**205 Design of Gardens and Small Properties II U 5**

Continuation of 204.

2 cl, 4 lab hrs. Prereq: 204.

**252 Landscape Architectural Design II U 5**

Introduction to general ecological systems and their relationship to landscape.

Au Qtr. 3 cl, 6 lab hrs. Prereq: Geol&Min 121, 2.15 CPHR, and 45 cr hrs and successful completion of portfolio review or permission of dept.

**253 Landscape Architectural Design III U 5**

Development of landscape design skills in abstract and real forms; color and spatial organization.

Wi Qtr. 3 cl, 6 lab hrs. Prereq: 252 and 271.

**254 Landscape Architectural Design IV U 5**

Design based upon knowledge of human behavioral psychology.

Sp Qtr. 2 cl, 8 lab hrs. Prereq: 253 and 272.

**271 Landscape Architectural Design Communication I U 3**

Introduction to techniques of landscape architectural diagrams, plans, and sections; use of pencil, pen, and marker to express design ideas.

Au Qtr. 3 cl, 3 lab hrs. Prereq: Larch major or permission of the department. VPA Admis Cond course.

**272 Landscape Architectural Design Communication II U 3**

Continuation of 271; introduction of isometrics; use of models as design tools; introduction of color rendering.

Wi Qtr. 3 cl, 3 lab hrs. Prereq: 271.

**321 Landscape Construction: Earthwork as Design U 5**

Study of techniques essential to the horizontal and vertical development of site designs; emphasis on grading as an artform.

Au Qtr. 3 cl, 6 lab hrs. Prereq: 253 and 271; Math 150. Not open to students with credit for 221.

**322 Landscape Construction: Layout Controls U 3**

Study of techniques essential to horizontal and vertical development of site designs; emphasis on layout, and circulation.

Wi Qtr. 2 cl, 2 lab hrs. Prereq: 221, or 321 and Math 150.

**323 Landscape Construction: Water in the Landscape U 5**

Integration of site systems; application of landscape construction and landscape materials detailing. Study of surface and subsurface drainage, stormwater management; pools, fountains, and water features in the landscape.

Sp Qtr. 3 cl, 6 lab hrs. Prereq: 221, or 321.

**333 Planting Design U 5**

Issues of planting design applied to the practice of landscape architecture.

Wi Qtr. 3 cl, 6 lab hrs. Prereq: 254, and 221 or 321, and Hort 234 or H&CS 234. Not open to students with credit for 233.

**355 Landscape Architectural Design V U 5**

Theory, principles, and vocabulary of site planning and design reflecting site analysis, social-cultural setting, programmatic requirement, conceptualization, and development-growth issues.

Au Qtr. 2 cl, 9 lab hrs. Prereq: 272, 252, 253, 254.

**356 Landscape Architectural Design VI U 5**

Macro-scale landscape planning studies involving urbanization and multi-use management of landscape resources.

Sp Qtr. 2 cl, 10 lab hrs. Prereq: 323 and 355.

**361 Support Computer Technologies U 5**

Support computer technologies critical in landscape architecture planning, design, analysis, and presentations.

3 cl, 4 lab hrs. Prereq: En Graph 294L or grad standing. Not open to students with credit for 373.

**367 The Making and Meaning of the American Landscape U 5**

Interpretation of the contemporary American landscape as the product of many interacting physical and sociocultural forces.

Au, Wi, Sp Qtrs. 3 cl, 2 1-hr rec. Prereq: English 110 or 111 or equiv. Not open to students with credit for 202 or Nat Res 367. Cross-listed in Natural Resources. VPA Admis Cond course. GEC second writing course (and arts and hums cultures and ideas BS only).

**424 Landscape Construction: Materials U 3**

Properties and production of man-made landscape building materials; material performance in exterior application; construction detailing with emphasis on wood and masonry assemblies.

Au Qtr. 3 cl, 3 lab hrs. Prereq: Math 150.

**457 Urban Landscape Design U 5**

Project scale site planning and design within the urban fabric; special study of artistic and ecological principles to address contemporary environmental, economical, and cultural issues in the urban setting.

Au Qtr. 3 cl, 6 lab hrs. Prereq: 323 and 355.

**597 Stewardship Issues in Environmental Design and Development U 5**

Exploration of the ecological, economic, ethical, political, and social-cultural ramifications of contemporary environmental issues; emphasis on ways the individual or group can respond effectively.

Sp Qtr. 5 cl. Prereq: Sr standing. GEC/LAR course.

**603 History of the Profession of Landscape Architecture U G 5**

Critical analysis of the historical formulation, growth, and present status of the profession of landscape architecture, concentrating on personalities, concerns, and works by selected landscape architects.

Sp Qtr. 5 cl. Not open to students with credit for 203 or 742.

**620 Landscape Design Implementation I P G 5**

Study of design implementation procedures including: grading and drainage, earthwork calculations, road alignment, staking and layout, surveying appliances.

Au Qtr. 3 cl, 6 lab. Prereq: 670.

**622 Landscape Design Implementation II P G 5**

Study of stormwater management in the treatment of landscape, uses of water in ponds, pools, and fountains; irrigation systems.

Wi Qtr. 3 cl, 6 lab hrs. Prereq: 620.

**624 Design Implementation: Construction Materials U G 3**

Introduction to landscape architecture construction materials and their use in building structures.

Au Qtr. 2 cl, 4 lab hrs. Not open to students with credit for 424.

**625 Design Implementation: Landscape Structures U G 3**

Structural design of site elements typical in landscape architectural design.

Wi Qtr. 2 2-hr cl. Prereq: Physics 103 and Math 150. Not open to students with credit for 425.

**626 Landscape Construction: Layout Controls G 3**

Basic surveying, horizontal, and vertical curve alignment for roads, and staking and layout of design elements.

Au Qtr. 2 cl, 2 lab hrs. Prereq: 1st yr grad standing or permission of instructor. Not open to students with credit for 322.

**627 Landscape Architectural Design/Build U G 5**

Introduction to the design process and construction techniques associated with the interconnected steps of designing and building small scale projects on campus.

Su Qtr. 3 2-hr cl. Prereq: 323 or 622 and permission of instructor.

**633 Planting Design U G 5**

Form and function of plant materials in design applications.

Wi Qtr. 3 cl, 3 lab hrs. Prereq: Hort 234 or H&CS 234. Not open to students with credit for 333.

**640 Landscape Architectural Design P G 5**

Exploration and application of principles of design, components and characteristics of space, landscape architectural design process, and small scale design.

Au Qtr. 2 cl, 12 lab hrs. Prereq: Grad standing in larch or permission of grad studies committee.

**642 Urban Landscape Design P G 5**

Landscape design in the urban setting; emphasis on design process, spatial structure, and design detailing of urban spaces.

Wi Qtr. 2 cl, 12 lab hrs. Prereq: 670 or permission of grad studies committee.

**644 Site Planning and Design P G 5**

Investigation of site planning and design at the project scale in the urban fringe or rural setting.

Sp Qtr. 2 cl, 12 lab hrs, arr field trips.. Prereq: 642 and 672. Travel and subsistence costs for the field trips will be borne by the student.

**658 Landscape Architecture Design and Construction U G 5**

Synthesis of design development based on theory, principles and skills developed in previous design, construction, history and other related courses.

Wi Qtr. 3 cl, 9 lab hrs. Prereq: 457 or 421.

**662 Terrain Analysis U G 5**

Methods and techniques of terrain analysis using aerial photographs, exploring characteristics of landform units, and addressing development issues.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: Geol&Min 121 or permission of instructor. Not open to students with credit for 362, or 610.

**663 Landscape Architecture Professional Practice Seminar U G 5**

Development of writing skills applied to professional issues in landscape architecture.

Sp Qtr. 2 2-hr cl, 1 1-hr cl. Prereq: Second writing course and sr standing, or 644. Not open to students with credit for 451. GEC course.

**665 Digital Landscape Architectural Design and Documentation U G 5**

Introduction to the design procedures appropriate to emerging technology, especially AutoCAD and related software introduction to documentation methods for construction and implementation.

Su Qtr. 3 cl, 3 2-hr labs. Prereq: 361 or equiv.

**670 Graphic Techniques in Landscape Architecture P G 3**

Graphic media, elements, and skills required in the preparation of landscape architectural presentations in plan, section, and elevation.

Au Qtr. Prereq: Grad standing in larch or permission of grad studies committee.

**672 Landscape Architectural Graphics II P G 3**

Principles and techniques of drawing and rendering of sections, isometrics, and perspectives.

Wi Qtr. 6 lab hrs. Prereq: 670 and grad standing in larch. Not open to students with credit for 272.

**693 Individual Studies U G 2-5**

For students in the Graduate School and those who wish to pursue special studies in landscape architecture.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing or permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

For students majoring in landscape architecture desiring to pursue special studies not offered in the fixed curriculum.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of the dept. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**740\*\* Research and Documentation in Landscape Architecture P G 5**

Research in professional practice techniques; emphasizes all phases of design investigation and documentation.

Au Qtr. 1 cl, 4 2-hr labs. Prereq: Grad standing in larch. Repeatable to a maximum of 15 cr hrs.

**750 Graduate Landscape Architectural Design: Advanced Site Planning U P G 5**

Advanced professional landscape architectural project design techniques; documentation and execution of all phases from programming through detailed design and construction documents.

Au, Wi, Sp Qtrs. 3 cl, 3 lab hrs. Prereq: Completion of 640 series or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**752 Graduate Landscape Architectural Design: Land Planning U P G 5**

The relationship between humans and the macro-environment; emphasizes contemporary land use issues, relationship between limited natural resources and human use; use of GIS technology to analyze landscapes and formulate plans and policies.

3 cl, 33-hr labs Prereq: Completion of 640 series or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**754 Graduate Landscape Architectural Design: Urban Design U P G 5**

Role of landscape in urban settings; study of project types such as rehabilitation or derelict land, neighborhood revitalization, creation of public places.

3 cl, 33-hr labs. Prereq: Completion of 640 series or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**760 Evaluation and Criticism in Landscape Architecture P G 2**

Seminar in design philosophy and aesthetic evaluation criteria in landscape architecture.

Au, Wi, Sp Qtrs. 1 2-hr seminar. Prereq: Grad standing in larch. Repeatable to a maximum of 8 cr hrs.

**998 Thesis in Landscape Architecture G 1-15**

Preparation of master's thesis.

Au, Wi, Sp Qtrs. Prereq: Permission of Graduate Studies Committee Chair. a maximum of 99 cr hrs. Repeatable. This is a Progress course. Grade P will be assigned until completion of the project, at which time a grade of S/U will be given. This course is graded S/U.

## Latin

414 University Hall, 230 North Oval Mall, 292-2744

See also Classics.

Classics majors specializing in Latin should consult the departmental statement in the College of Humanities section of the Colleges of the Arts and Sciences Bulletin. Placement tests are required for all matriculating (including transfer) students who continue the study of Latin in the University in courses 101, 102, 103, 104, and any 200-level course. A placement test will be given on the first day of the quarter. For details see the departmental secretary in 414 University Hall.

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence through the 104 level.

General Prerequisites for Courses Numbered 800 and Above

Prerequisites for admission to courses numbered 800 and above are graduate standing and permission of the chairperson.

**101 Elementary Latin I U 5**

Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 100.01, 100.02, or 101.01; or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**102 Elementary Latin II U 5**

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 100.02 or 101 or 101.01, or 5 cr hrs of 101.02 or 101.51. Not open to students with credit for 102.01 or 5 cr hrs of 102.51. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**103 Intermediate Latin I U 5**

Completion of Latin grammar and syntax; introduction to reading of Latin authors.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 102, 102.01, or 5 cr hrs of 102.02 or 102.51. Not open to students with credit for 103.01 or 5 cr hrs of 103.51. This course is available for EM credit. GEC for lang course.

**104 Intermediate Latin II U 5**

Selected readings in Latin literature.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Placement test, or 103.01, or 5 cr hrs of 103.02 or 103.51. This course is available for EM credit. GEC for lang course.

**206 Roman Comedy U 5**

Readings from the comedies of Plautus and Terence.

5 cl. Prereq: 104 or equiv high school Latin.

**210 Cicero U 5**

Readings from the Orations.

Au Qtr. 5 cl. Prereq: 104 or equiv high school Latin.

**211 Vergil U 5**

Readings from the Aeneid.

Sp Qtr. 5 cl. Prereq: 104 or equiv high school Latin.

**212\*\* Roman Historians U 5**

Readings from Caesar, Sallust, Livy, and/or Tacitus' Agricola.

Wi Qtr. 5 cl. Prereq: 104 or equiv high school Latin.

**213\*\* Ovid U 5**

Readings from the Metamorphoses.

5 cl. Prereq: 104 or equiv high school Latin.

**293 Individual Studies U 1-6**

Intermediate readings in Latin literature.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 101-104 or equiv; and written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**571 Fundamentals of Latin for Graduate Students I G 5**

Fundamentals of Latin grammar and syntax for grad students preparing to use Latin for work in non-classical fields.

5 cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 501. Credit does not apply toward minimum hrs required for master's or doctoral degree. No audit.

**572 Fundamentals of Latin for Graduate Students II G 5**

A continuation of 571; preparation for reading Latin texts.

5 cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 502. Credit does not apply toward minimum hrs required for the master's or doctoral degree. No audit.

**612\*\* Latin Prose Composition U G 5**

Review of elementary syntax leading to composition of sentences and short connected passages; concurrent readings from Caesar or Cicero.

Au Qtr. 5 cl. Prereq: 4 courses more advanced than 104 or permission of instructor.

**614\* Readings in Roman Lyric and Erotic Poetry U G 5**

Readings from Catullus, Horace, Propertius, and others.

2 2-hr cl. Prereq: 4 courses more advanced than 104. Not open to students with credit for 214. Repeatable to a maximum of 10 cr hrs.

**615\* Readings in Roman Oratory and Rhetorical Theory U G 5**

Readings in Roman orators and rhetoricians, including Cicero, Quintilian, and Tacitus.

2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 10 cr hrs.

**616 Readings in Latin Epic U G 5**

Readings in Latin epic, including such texts as Vergil's *Aeneid*, Ovid's *Metamorphoses*, and Lucan's *Bellum Civile*.

2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 10 cr hrs.

**617 Readings in Roman Historians U G 5**

Readings in Roman historians, including Caesar, Livy, and Tacitus.

2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 10 cr hrs.

**618<sup>A</sup> Readings in Roman Philosophy U G 5**

Readings from Roman philosophers, including Cicero, Lucretius, and Seneca.

2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 10 cr hrs.

**622<sup>A</sup> Readings in Roman Comedy U G 5**

Extensive readings drawn from the works of Plautus and Terence.

5 cl. Prereq: 4 courses more advanced than 104.

**623 Readings in Roman Satire and Novel U G 5**

Readings in Roman satire and novel, including texts by Horace, Juvenal, Apuleius, and Petronius.

2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 10 cr hrs.

**625<sup>A</sup> Readings in Post Classical Latin U G 5**

Extensive readings from texts illustrating the history of Latin language and literature of the medieval and/or Renaissance periods.

5 cl. Prereq: 4 courses more advanced than 104 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**660 Special Topics in Latin Literature U G 5**

Extensive reading from masterpieces of Latin literature; topic varies.

2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 20 cr hrs.

**693 Individual Studies U G 1-6**

Passages for reading and topics for investigation will be selected to meet the needs of individual students.

Su, Au, Wi, Sp Qtrs. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701<sup>\*</sup> Survey of Latin Literature: The Republic U G 5**

A survey of authors representative of the Republican period of Latin literature, with discussion of historical background and methods of criticism.

2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 601.

**702<sup>\*</sup> Survey of Latin Literature: Augustan Age U G 5**

A survey of authors representative of the Augustan period of Latin literature, with discussion of historical background and methods of criticism.

2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 602.

**703<sup>\*</sup> Survey of Latin Literature: Imperial Period U G 5**

A survey of authors representative of the Imperial period of Latin literature, with discussion of historical background and methods of criticism.

2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 603.

**H783 Honors Research U 3-5**

A program of study arranged for each student with individual conferences, reports, and an honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the Latin courses taken and with an average of B in the remainder; written permission of instructor under whose supervision the work is to be completed and ASC Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in Latin. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**802<sup>\*</sup> Advanced Latin Prose Composition G 5**

Study of the development and style of Latin prose; prose composition exercises; prepared and unprepared readings; conventions of prosody.

2 cl, tutorial arr. Prereq: 612 or permission of instructor.

**812<sup>A</sup> Studies in Vergil G 5**

Critical study of one or more of the works of Vergil.

2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**814 Studies in Cicero G 5**

Selected topics in the works of Cicero.

Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**830 Studies in Roman Drama G 5**

Critical study of one or more of the Roman dramatists: Plautus, Terence, Seneca.

2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**831 Studies in the Roman Historians G 5**

Selected topics in Roman historiography: Caesar, Sallust, Livy, Tacitus.

Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**832<sup>A</sup> Studies in Latin Lyric and Elegy G 5**

Selected topics: poems of Catullus, the Odes and Epodes of Horace, or the elegies of Propertius, Tibullus, or Ovid.

Sp Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**833<sup>A</sup> Studies in Roman Satire and Novel G 5**

Critical study of one or more of the Roman satirists and novelists: Lucilius, Horace, Persius, Petronius, Juvenal, Apuleius.

Au Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**835 Studies in Roman Epic G 5**

Selected topics in the history of Roman epic exclusive of Vergil: Ennius, Lucretius, Ovid, Lucan.

2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**894 Group Studies G 1-6**

Repeatable to a maximum of 20 cr hrs.

**993 Individual Studies G 1-5**

Assigned readings; supervised individual research.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**995 Seminar I G 5**

The seminar completes a two-qtr sequence (Au/Wi, Wi/Sp) begun with an 800-level intensive study of an author or genre; e.g. Cicero, Horace, Apuleius, or comedy.

Sp Qtr. Repeatable to a maximum of 20 cr hrs. This is a Progress course.

**999 Research G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Law**

220 Law-Drinko Building, 55 West 12th Avenue, 292-2631

The College of Law is on a semester calendar. For 1995-96, the Fall Semester will begin August 21, 1995 and end December 21, 1995. The Spring Semester will begin January 10, 1996, and end May 10, 1996. The credits contained on the listing below are semester credit hours. The equivalent number of quarter credit hours can be determined by multiplying the semester hours by one and one-half.

**L502 Legal Writing and Analysis P 2**

Introduction to legal analysis and writing.

Semester 2. 2 cl.

**L503 Contracts P G 2-3,5**

Remedies for breach; offer and acceptance; consideration; third party beneficiaries; assignment of rights and delegation of duties; conditions; impossibility and frustration; statute of frauds.

Semester 1, Semester 2. 1st Sem 5 cl hrs or 1st Sem 3 cr hrs, progress grade, 2 cr hrs 2nd Sem. Repeatable to a maximum of 5 cr hrs. This is a Progress course.

**L504 Torts P G 4**

Trespass to person; negligence; misrepresentation; nuisance; strict liability; liability insurance; alternatives to the fault system; and federal and state regulation of traffic safety.

Semester 1. 4 cl.

**L505 Property P G 4**

Acquisition, incidents, and transfer of ownership; possessory, concurrent, marital, and future interests, and contractual modification of these results. Semester 2. 4 cl.

**L507 Civil Procedure P G 4**

Civil procedure in state and federal courts; development of equity; abolition of common law forms of action; merger of law and equity; jurisdiction; venue. Semester 1. 4 cl.

**L510 Constitutional Law P G 4**

Functional study of the major substantive, methodological, and federalistic limitations upon governmental power obtaining under practice of judicial review.

Semester 2.

**L511 Legal Research P 1**

Use of law books and computer legal retrieval systems; research methodology and citation form.

Semester 1. 2 cl.

**L529 Legislation P 3**

The lawmaking process; how the legislative process works; process by which statutes are enacted; how judges interpret the legislative product in theory and practice.

Semester 2. 3 cl.

**L533 Criminal Law P 4**

Justifications for regulating behavior through criminal sanctions, how laws are crafted to reach the intended behavior, and issues of culpability, mens rea, and excuses.

Semester 1. 4 cl.

**L600 Appellate Advocacy II P 2**

Procedural and substantive aspects of appellate practice; the student prepares a brief and presents an oral argument on the basis of assigned research materials.

Semester 3. 2 cl. Prereq: 502, 511. Required for graduation. This course is graded S/U.

**L601 Legal Writing P 3**

Training in the preparation of legal documents.

Semester 1, Semester 2. 1 2-hr cl, 1-hr tutorial. Prereq: Completion of first-year law.

**L602 Advanced Legal Research P 2**

Advanced topics of legal research.

2 cl. Prereq: 511.

**L603 Evidence P 3-4**

Survey of rules of evidence; particularly demonstrative, testimonial, and circumstantial proof; qualification and examination of witnesses; privilege; relevancy; documents; hearsay rule and its exceptions.

**L605 Commercial Paper P G 2-3**

Types of commercial or negotiable paper; liability of parties; transfer and payment.

**L606 Federal Income Taxation P G 3-5**

Gross income; deductions; credits; attribution; timing; sales and other dispositions of property; characterization of income and deductions.

**607 Business Associations**

Formation, financing, governance, and regulation of corporations and partnerships, and including problems under the federal securities laws.

**L607.01 Business Associations P G 3-6**

4 or 5 cl. Not open to students with credit for 607.02.

**L607.02 Business Associations-Extended P G 3-6**

Semester 1, Semester 2. 3 cl. Not open to students with credit for 607.01. Repeatable to a maximum of 6 cr hrs. This is a Progress course. 2 sem sequence. Progress graded 1st sem, or given on completion of 2nd sem.

**L608 Advanced Business Association P G 2**

Advanced study of problems of large publicly-held corporations; federal corporate law; corporate consolidations and distributions.

Prereq: 607.

**L609 Sales P G 1-3**

A study of the Uniform Commercial Code and other statutes bearing on the sale of goods in the American market.

**L610 Secured Transactions P G 2-3**

Creation and perfection of security interests in goods and intangibles under the Uniform Commercial Code; priorities and remedies.

Not open to students with credit for 612.

**L611 Debtor and Creditor Law P G 2-3**

Debtor and creditor rights and remedies; emphasis on the Bankruptcy Code. Not open to students with credit for 612.

**L612 Secured Transactions and Debtor and Creditor Law P G 4**

Integrated treatment of secured transactions and debtor-creditor law.

Not open to students with credit for 610 or 611.

**L613 Employment Law P G 2-4**

State and federal regulation of the employment relationship with primary focus upon minimum wage and overtime compensation, workers' disability and unemployment compensation, safety and health, retirement and pension security, and wrongful discharge.

**L614 Labor Law P G 2-5**

Federal regulation of labor-management relations focusing upon employee organizational and representational rights, selection of bargaining representative, collective bargaining process, contract administration and enforcement, and internal union affairs.

2 to 5 cl. Prereq: 613. Not open to students with credit for 615 or 616.

**L615 Labor Law I P 2-3**

Federal regulation of labor-management relations focusing on employee organizational and representational rights, selection of bargaining representative, and collective bargaining process.

2 to 3 cl. Prereq: Completion of first yr law. Not open to students with credit for 614.

**L616 Labor Law II P 2-3**

Federal regulation of labor-management relations focusing upon collective bargaining process, contract administration and enforcement, and internal union affairs.

2 or 3 cl. Prereq: 615 and completion of first yr law. Not open to students with credit for 614.

**L618 Insurance P 2-4**

Insurance law and practice with particular reference to fire, life, and automobile insurance; insurable interest; warranties and representation; waiver and estoppel; construction standard policies.

2-4 cl.

**L619 International Law P G 2-4**

International agreements; status of states and individuals; recognition; jurisdiction; international claims; expropriation; human rights; sovereign immunity; war and peace; law of the sea; presidential congressional power.

**L620 Jurisprudence P G 2-4**

Jurisprudential thought as represented by general theories of or about law; assessment of leading legal doctrines; relationship to social control policy and to legal precepts.

4 cl hrs.

**L621 Real Estate Finance P G 2-4**

Introductory study of real estate financing, emphasizing mortgages, deeds of trust, installment land contracts, rights and remedies of borrowers and lenders, and contemporary financing innovations.

2-4 cl.

**L622 State and Local Taxation P G 2**

Legal problems arising in property, excise, income, and estate-inheritance taxation; tax administration and procedure.

**L623 Federal Antitrust Law P G 2-4**

Combinations in restraint of trade; monopolization, attempts and conspiracies to monopolize; mergers, patent antitrust problems, and price discrimination under Sherman, Clayton, and Federal Trade Commission acts.

**L624 Real Estate Transfers P 3**

Examination of legal doctrine and institutions that govern the commercial and residential real estate industry.

Semester 1, Semester 2. 3 3-hr cl. Prereq: Completion of first-year law.

**L625 Copyright Law P G 2-3**

Protection of literary and artistic property under the federal copyright statute, related legislation and unfair competition law.

**L627 American Legal History P G 2-3**

The history of American law from its colonial antecedents until the twentieth century, emphasizing the relationship between law and the changing social, political, and economic conditions.

**L628 Legal Problems of Financial Information P G 2-3**

Problems of financial information in the context of business enterprise law and tax law.

**L629 Legislation P G 2-3**

Roles of the lawyer in the legislative process; legislative organization, jurisdiction, and procedure; formation of legislative policy; legislative drafting; statutory interpretation.

**L633 Criminal Law P 3-4**

Substantive criminal law; functions and goals; legislative and judicial roles; constitutional limitations; fundamental concepts of culpability; defenses; definitions and functions of selected offenses.

**L634 Juvenile Justice P 2-4**

The law applicable to children, including a study of agency and juvenile court treatment of dependent, neglected, abused, unruly, and delinquent children. Repeatable to a maximum of 7 cr hrs.

**L635 Family Law P G 3-4**

Legal concerns in marital relationships, including entrance into marriage, spousal relationships during marriage, annulment, divorce, custody, and post-divorce financial arrangements; legal concerns in quasi-marital living arrangements; communal living and homosexual relationships.

**L636 Law and the Mentally Disabled P G 2-3**

Problem-oriented analysis of interaction between law and social science; emphasis on civil commitment, rights of institutionalized individuals, rights to community services (educational, residential, employment), and guardianship.

**L637 Comparative Legal History P G 2-3**

Comparative studies in history of law and exploration of relationship between the development of legal systems and societal structures.

**L639 Federal Criminal Law P G 2-3**

Advanced substantive and procedural study of the federal criminal law enforcement system including RICO (Racketeer Influenced and Corrupt Organizations), mail fraud, drug offenses, tax enforcement, bank secrecy, and civil rights.

3 cl. Prereq: 633.

**L640 Criminal Procedure: Police Evidence Gathering Practices P 3**

Legality of police practices to gather evidence; emphasis on interrogation and search and seizure; some reference to identification procedures and entrapment.

**L641 Criminal Procedure: The Pretrial Process P 3**

Study of the criminal justice system emphasizing the right to counsel, bail, preliminary proceedings, grand jury, speedy trial, discovery, and pleas.

**L644 Agency and Employment P 2-3**

A system-descriptive approach to the common incidents of employment, partnership, and other agencies.

**L646 Protection of Personality Interest P G 2-3**

Legal rights and remedies developed to protect interests in reputation, privacy, and other aspects of human dignity.

**L647 Sex-Based Discrimination and the Law P G 2-3**

Law, legal institutions, and policy issues relevant to the redress of sex-based discrimination; constitutional, legislative, executive, and judicial avenues of redress.

**L648 Land Use Planning Law P G 2-3**

Zoning, subdivision controls, and an introduction to municipal planning; topics vary, may include eminent domain, state and regional planning, government development, and private land use controls.

**L649 Advanced Land Use Planning Law P G 3**

Study of public regulatory devices for land use and development; eminent domain; planned unit development; urban renewal; official maps; new towns; open space.

Prereq: 648.

**L650 Local Government Law P G 3**

Types and organizations of local government units; intergovernmental relations; "home rule" power of Ohio municipalities; personnel; lawmaking; community planning; taxing and finance; contracts; legal liability.

**L652 Banking Law P G 2-3**

Study of development of banking activities, structure, and regulation; emphasis on state and federal banking laws; interinstitutional competition, and laws relating to geographic and product expansion.

**L656 Gratuitous Transfers P G 2-4**

Gifts, wills, intestate succession, protection of spouse and other dependents, fiduciary administration, social security and other employee benefits, life insurance.

2-4 cl hrs.

**L657 Consumer Law P G 2-3**

In-depth study of consumer rights and remedies as provided by the common law and federal and state statutes, with particular emphasis on the Federal Truth In Lending Act.

**L658 Advanced Constitutional Law P G 2-3**

Constitutional theory, with emphasis on competing views of judicial review and the judicial function; the methodologies and processes of constitutional decision making; and criteria for judicial justification.

**L659 Commercial Law P 3-6**

Combination of sales, commercial paper, and secured transactions courses; focuses on the entire Commercial Code and explores related federal statutes. Repeatable to a maximum of 6 cr hrs.

3 or 6 cl. Prereq: Completion of first yr law program. Not open to students with credit for 605, 609, or 610. Repeatable to a maximum of 6 cr hrs. This is a Progress course. Two sem sequence. Progress graded 1st sem; final grade awarded upon completion of 6 cr hrs.

**L694 Group Studies P 1-4**

Group study in selected areas of the law.

Repeatable to a maximum of 13 cr hrs. This is a Progress course.

**696 Anglo-American Legal System U 1-6**

Introduction to the Anglo-American Legal System for undergraduate students, taught summers at the University of Oxford, Oxford, England.

Su Qtr. Limited to students accepted in Oxford Summer Program.

**L697 Study at a Foreign Institution P 1-10**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Semester 1; Semester 2; Semester 3. Prereq: Written permission of the Dean. Repeatable to a maximum of 30 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation; limited to students in education, law, medicine, nursing, social work, bio-medical sciences, and allied health professions.

**L700.01 Care of Patient/Client P G 1-2**

Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.

Repeatable to a maximum of 4 cr hrs.

**L700.03 Ethical Issues P G 1-2**

Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, mind control, malpractice, and social responsibility of the professions.

Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

**L700.04 Interprofessional Practicum in Clinical Settings P G 1-3**

Interprofessional teamwork in clinical settings.

Semester 2. Repeatable to a maximum of 4 cr hrs.

**L703 Legal Negotiation and Settlement P 2-4**

Study of the theory, law, and practice of transactional and settlement negotiations through actual negotiations by individual students in a variety of legal negotiation settings.

2 2-hr cl. Prereq: 736.01 or professional responsibility recommended. Enrollment limited to 16 students, class attendance mandatory.

**L704 Trial Practice P 2-4**

Forensic skills developed through actual trial advocacy by individual students in civil or criminal cases.

Prereq: 603 or written permission of instructor.

**L705 Complex Litigation P 2-4**

Advanced substantive and procedural issues arising in multi-party, multi-jurisdiction complex litigation. Lecture, student analysis, problem solving.

Prereq: 507.

**L706 Conflict of Laws P G 3-4**

Private law pertaining to jural relations containing one or more foreign elements; jurisdiction; foreign judgments; domicile; choice of law; torts; workmen's compensation acts; contracts; property; family law; decedents' estates.

**L707 Administration of Decedents' Estates P 2-3**

Probate and contests of wills; jurisdiction; effect and necessity of administration; inventory and assets; contracts; sales and investments by personal representatives; claims; accounting and distribution.

**L708 Regulation of Security Distributions P G 2-3**

Analysis of Securities Act of 1933 and its pervasive effects on the issuance and transfers of securities.

**L709 Advanced Securities P G 2-4**

Advanced topics in federal and state securities law.

Prereq: 607, and prereq or concur: 708.

**L710 Federal Courts P G 3-4**

The federal judicial system; jurisdiction of the district courts, courts of appeals, and United States Supreme Court.

3-4 cl hrs.

**L711 Law and Medicine P G 2-4**

Selected issues in the practice of medicine; medical malpractice, ethical issues, regulation of the health care industry, and use of medical testimony and proof in litigation.

**L713 Appellate Practice IV P 1-4**

Procedural and substantive aspects of appellate practice; perfection of appeals; preparation of briefs and oral argument; participation by third-year students in various aspects of Moot Court Program.

1 to 4 cr hrs by arrangement with instructor. Repeatable to a maximum of 6 cr hrs. Grade given on completion of third-year Moot Court Program. This course is graded S/U.

**L715 Corporate Taxation P G 3-4**

Taxation of organizations; operations; sales and liquidations; divisions and reorganizations.

Prereq: 606.

**L716 International Aspects of U.S. Income Taxation P 2-3**

United States taxation of transnational transactions, including taxation of foreign entities operating in the United States and taxation of United States entities operating in foreign countries.

Prereq: 606.

**L718 Unfair Trade Practice P G 2-3**

Competitor, consumer, and administrative remedies for unfair business practices, including trademark infringement, trade secret appropriation, false advertising and disparagement, and copyright infringement.

**L719 Natural Resources P 3**

The nature and incidents of public and private interests in water, minerals, oil and gas; conveyancing of natural resources, and mineral, oil, and gas leasing.

**L720 Roman Law P 3**

Studies in the origins and development of Roman law based on original sources of translation. Cross-listed in Classics as 607. This course is graded S/U.

This course is graded S/U.

**L725 Deferred Compensation P 2-3**

Federal tax consequences of nonqualified deferred compensation plans and qualified pension, profit sharing, and stock bonus plans.

**L727 Regulated Industries P 2-4**

Legal and economic principles of rate regulation and entry requirements in utility, broadcasting, and transportation industries.

**L728 International Transactions P G 2-4**

Legal problems in transnational context arising from doing business abroad; investments; establishment; exchange controls; trade, licensing; extraterritoriality of regulatory legislation; international agreements; European Common Market.

**L729 Administrative Law P G 3-4**

A study of the creation, operation, and control of federal administrative agencies, emphasizing their legislative, investigative, and adjudicatory authority and its control through judicial review.

**L731 Business Planning P G 2-4**

Advanced topics concerning business enterprises.

Prereq: 606 and 607.

**L732 Environmental Law P G 2-4**

Federal environmental legislation, regulations, and judicial interpretation, including Natural Environmental Policy Act, the Clean Air Act, the Clean Water Act, and the Solid Waste Act, as amended.

**L733 Political and Civil Rights: The First Amendment P G 2-3**

Advanced study of First Amendment precedent and doctrines governing the press, speech, association, and church-state relations.

**L734 Political and Civil Rights: Equal Protection of the Law P G 2**

Advanced study of civil rights and legal problems of race relations in the contemporary social milieu; segregation; discrimination; equal protection; separatism; and affirmative action.

**L735 Law Journal P 1-2**

Special studies covering diverse subjects of a legal nature participated in by the group selected for work on the Law Journal.

Prereq: Selection for Law Journal by editors. Repeatable to a maximum of 4 cr hrs. Students may earn up to 2 cr hrs for Law Journal participation prior to the beginning of the fifth semester, and may earn an additional 2 cr hrs for participation in the two final semesters of academic residence. This course is graded S/U.

**736 Professional Responsibility**

Legal and ethical problems of the legal profession and the practicing lawyer. Required course.

**L736.01 Legal Profession P 1-2**

Unauthorized practice, bar admission, group legal services, malpractice, professional organization, and discipline.

Semester 1, Semester 2, Semester 3. 1-2 cl. Prereq: First year law course.

**L736.02 Legal Profession P 1-4**

A more comprehensive presentation of unauthorized practice, bar admission, group legal services, malpractice, professional organization, and discipline.

Semester 1, Semester 2, Semester 3. 4 cl. Prereq: First year law course. Not open to students with cr for 736.01.

**L737 Patent Law P G 2-3**

Fundamentals of substantive patent law relating to standards of patentability, patent claim interpretation and enforcement in patent litigation, and licensing.

**738 Study and Practicums in Legal Problems**

Advanced study and training in performance of legal services for the poor under supervision of clinical faculty and staff attorney.

Pursuant to the New York Court of Appeals Rules for Admission to Practice, students who enroll for more than 8 cr hrs may be ineligible for admission to practice in New York. No student may enroll in more than 16 cr hrs.

**L738.01 Criminal Defense Practicum P 2-6**

Development of the basic knowledge and skills of criminal law practice. Prereq or concur: 603 plus one or more of the following: 633, 640, 641; or written permission of instructor.

**L738.02 Civil Law Practicum P 2-6**

Development of the basic knowledge and skills of civil law practice on behalf of the poor.

May not be taken simultaneously with any other practicum.

**L738.04<sup>a</sup> Juvenile Law Practicum P 2-6**

Study of the intricacies of the juvenile intake process, difficulties of dealing with a total family situation involving child neglect or juvenile delinquency, and substantive legal problems of the juvenile area.

Prereq: None; 634, 640 and/or 641 recommended.

**L738.07 Civil Liberties Practicum P 1-6**

Supervised clinical course involving study of problems peculiar to civil liberties law practice, including handling of selected cases involving civil liberties.

Prereq: None; 733 and 734 recommended.

**L738.20 Selected Legal Problems Practicum P 1-6**

Topics will change as specially scheduled in any semester.

Repeatable to a maximum of 8 cr hrs.

**L739 Pretrial Litigation P 3**

Depositions and client interviews; drafting of interrogatories; case strategies.

Semester 1, Semester 2. 3 3-hr cl. Prereq: Completion of first-year law.

**L740 Taxation of Gifts, Trusts, and Estates P 2-3**

Tax treatment of gratuitous transfers, including gift, estate, and generation-skipping taxation, and income taxation of trusts, estates, and beneficiaries.

**L742 Trusts and Future Interests P G 3-4**

Classification of interests, construction of limitations, destructibility rule, Doctrine of Worthier Title, Rule in Shelley's Case, Rule against Perpetuities, trusts, powers, and duties of trustees.

Prereq: 656.

**L743 Remedies P G 2-4**

An integrated study of remedial theory and devices available in the context of torts, contracts, and property law.

**L744 Employment Discrimination Law P 2-4**

A constitutional and statutory study of federal and state laws that proscribe employment discrimination based upon race, color, religion, sex, national origin, age, and physical and mental handicap.

2-4 cl.

**L745 Federal Taxation of Partnerships and Partners P G 2-4**

Federal income taxation of partners in general and limited partnerships.

2-4 cl. Prereq: 606.



**L746 Injunctions P 2**

Requirements for equitable jurisdiction, the collateral bar rule, interlocutory relief, procedures for granting, modifying, and appealing injunctions, and contempt.

**L747 Statutory Civil Rights P 2-3**

Study of major federal civil rights statutes covering topics such as discrimination in housing, public accommodations, voting, discrimination in private contracts, by government units and officials, and by programs that receive federal financial aid.

2 or 3 cl. Prereq: Completion of first yr law program.

**L750 Foreign Relations Law P 3**

Constitutional, statutory, and international law basis for conduct of foreign affairs by the U.S.

Semester 1, Semester 2. 3 1-hr cl. Prereq: Completion of first-year law.

**L751 Religion and the Constitution P 3**

Treatment of religion by federal and state constitutions.

Semester 1, Semester 2. 3 1-hr cl. Prereq: Completion of first-year law.

**L752 Law of Politics P 3**

Examines the laws that govern political elections, including campaign finance rules, ballot access issues, and re-apportionment.

3 cl. Prereq: 510.

**L780 Law and Economics P 2-3**

Economic analysis of legal opinions, including a review of how courts use economic analysis.

3 cl. Prereq: Completion of first year law curriculum.

**L781 Comparative Law P 2-3**

Broad study of legal systems with emphasis on patterns of similarities and differences.

3 cl. Prereq: Completion of first year law curriculum.

**L782 Products Liability P 3**

Examines the theories and defenses of those involved in the manufacturing and selling of products.

3 cl. Prereq: Completion of first-year law curriculum.

**L793 Individual Studies P G 1-4**

By special arrangement with the dean's office, special problems or projects may be taken for credit under the supervision of members of the faculty. The credit granted varies in proportion to the magnitude of the project. In general, assignment of special problems will be limited to instances of exceptional student specialization, scheduling difficulties, and curricular irregularity.

Repeatable to a maximum of 13 cr hrs. This course is graded S/U.

**L794 Group Studies P G 1-6**

Group study in selected areas of the law.

Repeatable to a maximum of 13 cr hrs.

**796 Seminars**

Small group study and training in legal and non-legal research, expository writing, and various functions of the practicing lawyer.

**L796.03 Constitutional Problems P G 2-3**

Advanced constitutional questions, including evolution of judicial review, intergovernmental relationships, protection of civil liberties, special problems under Ohio Constitution.

**L796.07 Legal Regulation of Devolution of Property P G 2-3**

Socio-legal problems raised by devolution of wealth through such arrangements as public welfare programs, union welfare funds, insurance, foundations, charitable trusts, and pension trusts.

**L796.08^ Problems in the Law of Evidence P G 2-3**

Advanced evidentiary questions involved in preparation for and trial of cases.

**L796.13 Medical-Legal Problems P G 2-3**

Conflict in concept between disciplines of law and medicine in matters of causation, injury, disability, prognosis, aggravation, and re-injury related to their use in proof of such elements in litigation.

**L796.16 Right of Privacy P G 2-3**

Individual's interests in freedom from publicity and in physical seclusion; particularly legal response to social and technological changes which threaten these interests.

**L796.19^ Selected Problems in Criminal Law and Procedure P G 2**

Topics vary and will be announced each semester.

**L796.20 Research Seminar in Law P G 2-3**

Topics will change as specially scheduled in any quarter.

Repeatable to a maximum of 6 cr hrs. Law 796M20, Women and the Law, grad level, 2 semester cr hrs, cross-listed in Women's Studies.

**L796.39 Business Planning P G 2-3**

Planning and drafting in field of business association; principally concerned with problems in general and limited partnerships, business trusts, and closely-held corporations.

**L796.44 Legislative Planning P G 2-3**

Role of lawyer in advocating or opposing state and federal legislation; problems selected from past and current proposals before legislature.

Prereq: 629. Repeatable to a maximum of 6 cr hrs.

**L796.47 Securities Regulation P G 2-3**

Study of recent legal developments affecting security trading market, brokers, exchanges and NASD, investment companies, and other institutional investors.

Prereq: 709.

**L796.48 Trade Regulation P G 2-3**

Study of current problems of trade regulations, e.g. antitrust, unfair trade practices, patents, food and drug law.

Prereq: By designation of instructor.

**L796.51^ Social and Environmental Litigation P G 2-3**

Study of impact of law on social and environmental problems with emphasis on procedure and choice of remedies.

Prereq: None; 710 and 719 recommended.

**L796.52 Federal Criminal Law P G 2-3**

The relationship of federal and state criminal law; historical role and specialized problems of federal criminal law.

**L796.55^ Consumer Credit P G 2-3**

Consumer credit; statutory and judicial regulation, with particular emphasis on the problems of the poor consumer.

Prereq: 605, 609, or 610.

**L796.58 Law and the Political Process P G 2-3**

Exploration of the lawyer's role in the political process; the relationship of political parties to the election process; and the interplay of legal requirements and the campaign and voting procedures.

**L796.61 Society, Deviance, and the Law P G 2-3**

How certain members of society are labeled as deviant and how society reacts to that label with legal sanctions and social management techniques.

Prereq: Permission of instructor.

**L796.62 Commercial Law P G 2-3**

In-depth consideration of commercial law, focusing primarily on the Uniform Commercial Code.

Prereq: 605, 609, and 610.

**L796.63 Problems in Torts P G 2-3**

Exploration of current and emerging problems in the law of torts.

**L797 Interdepartmental Seminars P 1-5****Linguistics**

222 Oxley Hall, 1712 Neil Avenue, 292-4052

See also English, the foreign languages, Romance Linguistics, and Sanskrit.

**201 Introduction to Language in the Humanities U 5**

Examination of language as a system of human communication; provides students with the tools needed for the recording, investigation, and close analysis of language.

Au, Wi Qtrs. 5 cl. H201 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 202. GEC arts and hums cultures and ideas course.

**202 Introduction to Language in the Social Sciences U 5**

Examination of language as a system of human communication; provides students with a general understanding of human linguistic behavior and cognition.

Not open to students with credit for 201. GEC soc sci individuals and groups course.

**203^ Language Differences and Language Universals U 5**

Differences in sound systems, word structure, and grammar; illustrations from foreign accents; language types; universal principles of structure.

Prereq: 201 and English 110 or 111 or equiv.

**294 Group Studies U 5**

Introductory topics in linguistics.

Repeatable to a maximum of 10 cr hrs.

**305 Sociolinguistics of African-American English U 5**

Overview of the history and structure of African-American vernacular English and its relationship to socio-cultural organization in the African American community.

Sp Qtr. 3 1.5-hr cl. Not open to students with credit for AfAm&AST 305. Cross-listed in African-American and African Studies.

**311 Rebuilding the Tower of Babel: Language, Diversity, History, and Ideology U 5**

A critical study of some of the mechanisms shaping language evolution, examining a number of linguistic, historical, ideological, and cultural issues. Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for 385 or NELC 311. Cross-listed in Near Eastern Languages and Cultures. GEC arts and hums cultures and ideas course.

**330 Language and Gender U 5**

How culturally enshrined ideas about gender affect language and the use of language and how linguistic conventions for the expression of gender differences reinforce these ideas.

Prereq: English 110 or 111 or equiv. Not open to students with credit for 230. GEC social diversity course.

**361 Language and Social Identity in the U.S. U 5**

Relationships between language and social diversity in the general American speech community; discussion of how individuals and social groups distinguish themselves on the basis of language.

Prereq: 201 or permission of instructor. Not open to students with credit for 261. GEC soc sci individuals and groups, and social diversity course.

**365 Language across Cultures U 5**

Investigation of relationships between language and culture in different societies with a view to shedding light on cross-cultural similarities and differences.

Prereq: English 110 or 111 or equiv. Not open to students with credit for 265. GEC soc sci individuals and groups course.

**371 Language and the Mind U 5**

Introduction to the psychological processes for producing and understanding speech, the means by which they arise in the child, and bases in the brain.

Su, Au, Wi Qtrs. H371 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 201 or 202, or Psych 100. Not open to students with credit for 271 or Psych 371. Cross-listed in Psychology. GEC soc sci individuals and groups course.

**H384 Language Processing Technology U 5**

Introduction to the field of human language processing and its applications, including speech recognition and synthesis, and grammatical modeling.

Au Qtr. 2 2-hr cl, plus arr lab hrs. Prereq: 201 or 202 or 601, and enrollment in an honors program.

**500 Phonetics U G 5**

Cross-linguistic survey of the sounds of the world's languages.

Prereq: 201 or 202 or equiv. Not open to students with credit for 600B01.

**502 Syntax U G 5**

Basic elements of syntactic description and an overview of syntactic structure across languages.

Prereq: 201 or 202 or equiv. Not open to students with credit for 602B01.

**503 Phonology U G 5**

Introduction to phonological analysis and description, and an overview of phonological structure across languages.

Prereq: 201 or 202 or equiv. Not open to students with credit for 603B01.

**509^ Morphology U G 5**

The grammatical and phonological analysis of words, and their significance in linguistic structure.

Au Qtr. 4 cl, 1 lab. Prereq: 201 or 202 or equiv.

**600 Phonetics****600.01 Phonetic Theory U G 5**

Principles of articulatory phonetics, with some discussion of acoustic phonetics; practice in the production, recognition, and transcription of sounds in various languages of the world.

Prereq or concur: 601 or an equiv course in linguistics or phonetics. Not open to students with credit for 600.

**600.02 Laboratory Phonology U G 5**

Introduction to laboratory methods and quantitative models of speech for linguistics.

Prereq: 600.01.

**601 Introduction to Linguistics U G 5**

A broad introduction to general linguistics: survey of phonological, morphological, syntactic, and semantic analysis, and of historical and comparative linguistics.

**602 Syntactic Theory**

Theories of syntax; principles of syntactic description.

**602.01 Syntactic Theory I U G 5**

Prereq: 601.

**602.02 Syntactic Theory II U G 5**

Prereq: 602.01 and 680.

**603 Phonological Theory**

Introduction to phonological analysis and the principles governing the structure, acquisition, and change of phonological systems; survey of major phonological theories.

**603.01 Phonological Theory I U G 5**

Prereq: 601.

**603.02 Phonological Theory II U G 5**

Prereq: 603.01.

**603.03^ Phonological Theory III U G 5**

Prereq: 603.02.

**605 An Introduction to African-American English G 5**

Introduction to the structure and history of the varieties of English used by African-Americans and the relationship between language use and socio-cultural context.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor; 201 or equiv recommended. Not open to students with credit for AfAm&ASt 605. Cross-listed in African-American and African Studies.

**609 Morphological Theory U G 5**

Introduction to and comparison of current theories of morphology, with application to linguistic data and problems.

Prereq: 601 or permission of instructor.

**611 Introduction to Historical Linguistics U G 5**

Introduction to the methods and principles of historical linguistics.

Prereq: 601 and 603.01, or background in phonology with permission of instructor.

**612 Introduction to Cognitive Science U G 3**

Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.

Prereq: Permission of instructor or a total of 12 cr hrs from at least two of the following areas: cptr/inf, linguist, philos, and psych. Not open to students with credit for Cptr/Inf 612, Philos 612, or Psych 612 or 794 (Sp Qtr 1989) or 794A (Wi Qtr 1990). Cross-listed in Computer and Information Science, Philosophy, and Psychology.

**615 Psycholinguistics U G 5**

An introduction to high-level language processing, including word recognition, sentence understanding, and discourse processing.

Prereq: 601 or permission of instructor. Not open to students with credit for Psych 615 or Linguist 671. Cross-listed in Psychology.

**623 Topics in Indic Linguistics U G 3,5**

Possible topics include advanced classical Sanskrit, introductory Vedic Sanskrit, Indo-Iranian or Indo-Aryan linguistics, or studies in the ancient Indian grammarians.

Prereq: 622 or Sanskrit 622 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**650 Field Methods in Linguistics****650.01 Field Methods I U G 5**

Methodology for determining the phonological system of a previously unknown language through the use of a native informant.

Prereq: 600 or permission of instructor. Repeatable to a maximum of 40 cr hrs.

**650.02 Field Methods II U G 5**

Methodology for determining the morphological and syntactic system of a previously unknown language through the use of a native informant.

Prereq: 650.01. Repeatable to a maximum of 40 cr hrs.

**661 Sociolinguistics**

Description and explanation of the interaction between linguistic and social factors in language.

Prereq: 601 or permission of instructor.

**661.01 Introduction to Sociolinguistics U G 5**

Survey of approaches to the study of language in its social context: sociology of language, ethnography of speaking, discourse analysis, quantitative sociolinguistics.

**661.02 Introduction to Quantitative Sociolinguistics U G 5**

Exploration of language in its social context through the methods of quantitative analysis of linguistic variation, including the Labovian and implicational models.

Prereq: 661.01.

**672^ Language Description U G 3-5**

Informant techniques and (if available) textbooks and published linguistic analyses are employed in analyzing and describing a language.

Prereq: 601. Repeatable to a maximum of 30 cr hrs.

**680 Formal Foundations of Linguistics U G 5**

Applying tools from set theory, symbolic logic, model theory, algebra and formal grammar in the foundations of formal linguistics theories and in linguistic analysis.

Au Qtr. 4 cl, 1 lab. Prereq: 601 or equiv.

**681 Algebraic Linguistics U G 5**

Formal properties of grammar and automata; relations between linear, context-free and context-sensitive grammars and finite, pushdown-storage and linear-bounded automata; properties of transformational grammars.

Prereq: 601 and permission of instructor.

**683 Linguistic Semantics****683.01 Semantics I U G 5**

Problems and methods in linguistic semantics, using logic and semantic model theory as analytic tools; reference, compositionality, presupposition, conversational implicature, speech acts, deixis.

Prereq: 680 or equiv.

**683.02 Semantics II U G 5**

Montague semantics and more recent semantic theories; influential analysis of important problems, such as generalized quantifiers, lattice-based accounts of plurals and events, discourse representation theory.

Prereq: 683.01 or equiv.

**684 Computational Models of Grammar**

Introduction to computational methods used to construct models of grammatical knowledge and sentence processing.

2 2-hr cl.

**684.01 Computational Models of Grammar I U G 5**

Symbolic computation applied to the structure of words and sentences, models of morphology and syntax, parsing algorithms.

Wi Qtr. Prereq: 602.01 and 680, or courses in logic and discrete mathematics; Cptr/Inf 201 or equiv.

**684.02 Computational Models of Grammar II U G 5**

Computational models of semantic interpretation, and the role of pragmatic knowledge in sentence processing; implementation of current grammatical theories.

Sp Qtr. Prereq: 683.01 and 684.01.

**685<sup>+</sup> Languages in Contact U G 3,5**

Study of the effects of language contact on the structure of the involved languages; of the characteristics of the individuals and communities involved in language contact.

Prereq: 601.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq or concur: 601 or permission of instructor. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Study of topics not regularly scheduled for seminars in linguistics, under the direction of a faculty member.

Prereq: 601. Repeatable to a maximum of 30 cr hrs.

**695<sup>+</sup> Seminar in Anthropological Linguistics U G 5**

Prereq: Anthropol 675 or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of cognitive science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Prereq: Cptr/Inf 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Philosophy, Psychology, and Speech and Hearing Science.

**780<sup>+</sup> Formal Pragmatics U G 5**

Introduction to contemporary theories of pragmatic phenomena which build on theories of dynamic interpretation in formal semantics.

Prereq: 683.02.

**H783 Honors Research U 3-5**

Informal conferences to allow full scope to the initiative of the student, who will prepare an honors thesis in consultation with the instructor.

Prereq: 4th yr standing and the completion of departmental honors requirements with a grade of A in at least half of the linguist courses, including approved related courses; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in linguist. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**795 Seminar in Linguistics U G 1-5**

A selected group study, with emphasis on individual writing and presentation.

Prereq: 602 and 603, or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**800 Proseminar in Linguistics G 3**

Introduction to the problems, methods, and tools of linguistic research.

Recommended for all candidates for grad degrees. This course is graded S/U.

**801<sup>+</sup> Historical Linguistics I G 5**

An introduction to the methods, conventions, and literature of comparative-historical linguistics with primary attention to the comparison and reconstruction of Indo-European phonological systems.

Prereq: 601, and either 611 or written permission of instructor.

**802<sup>+</sup> Historical Linguistics II G 5**

Advanced work in the comparison and reconstruction of morphological and syntactic systems, primarily Indo-European; detailed examination of some of the results of past and current scholarship.

Prereq: 801.

**803<sup>+</sup> Topics in Indo-European G 5**

Study of various Indo-European languages and language families and exploration in depth of specific problems in Indo-European grammar.

Prereq: 802. Repeatable to a maximum of 30 cr hrs.

**809 Seminar in Morphology G 3,5**

Advanced topics in morphological analysis.

Arr. Prereq: 609. Repeatable to a maximum of 30 cr hrs.

**812 Seminar in Semantics G 5**

Accounts of semantic judgments in languages, especially within the theory of generative grammar; relationships between syntax, semantics, and language use.

Prereq: 602.02; a course in symbolic logic recommended. Repeatable to a maximum of 30 cr hrs.

**814 Seminar in Pragmatics G 5**

An intensive examination of one or more major problems in pragmatics, such as speech acts, implicature, or presupposition.

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**820 Seminar in Syntax G 5**

Advanced topics in syntactic analysis.

Prereq: 602.02. Repeatable to a maximum of 30 cr hrs.

**821 Seminar in Phonology G 5**

Advanced topics in phonological analysis.

Prereq: 603.02. Repeatable to a maximum of 30 cr hrs.

**822<sup>+</sup> Seminar in Historical Linguistics G 5**

Advanced topics in methods and principles of diachronic analysis.

Prereq: 611 or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**825 Seminar in Advanced Phonetics G 5**

Study of specific problems in articulatory and acoustic phonetics at an advanced level.

Prereq: 600. Repeatable to a maximum of 30 cr hrs.

**830 Teaching Introductory Linguistics G 3**

Designed to train instructors in the techniques and materials used to teach introductory linguistics courses.

Prereq: 601 or equiv. This course is graded S/U.

**861 Seminar in Sociolinguistics G 3-5**

Advanced topics in sociolinguistics.

Arr. Prereq: 661. Repeatable to a maximum of 30 cr hrs.

**871 Seminar in Psycholinguistics G 3-5**

Advanced topics in psycholinguistics.

Sp Qtr. Arr. Prereq: 671. Repeatable to a maximum of 30 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs. with permission of dept.

**993 Individual Studies G 1-5**

Assigned reading and individual research.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**999 Research in Linguistics G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Master of Business Administration

100 Gerlach Hall, 2108 Neil Avenue, 292-8511

### 800 Financial Accounting and Reporting G 3

Mechanics of income statement, balance sheet, and fund flows; accounting policy choices; financial statement analysis using fund flows; ratios, quality of earnings, sustainable growth rates, and inflation adjustments.

Au Qtr. 2 2-hr cl. Prereq: Enrollment in the structured MBA.

### 801 Cost Accounting G 2

Cost data for inventory valuation; cost data for decision making (pricing, product-mix, make or buy); cost data for performance evaluation and control.

Wi Qtr. 2 2-hr cl for 5 weeks. Prereq: Enrollment in the structured MBA. Not open to students with credit for 802.

### 802 Accounting for Decision Making G 4

Determination of costs of production and use of these costs in planning, performance evaluation and control.

Au Qtr. 2 2-hr cl. Prereq: Accting 711 or equiv and enrollment in structured evening MBA program. Not open to students with credit for 801.

### 805 Business Solution Teams I G 4

Two quarter sequence course that engages teams of MBA students in solution of business problems for real world companies who serve as clients.

Au Qtr. 2-hr cl. Prereq: Completion of MBA core courses and enrollment in structured MBA or evening MBA program. This is a Progress course. Credit will be awarded upon completion of 806.

### 806 Business Solution Teams II G 4

Two quarter sequence course that engages teams of MBA or evening MBA students in solution of business problems for real world companies who serve as clients. Continuation of 805.

Wi Qtr. 2 2-hr cl. Prereq: Completion of MBA core courses and enrollment in structured MBA program. This is a Progress course.

### 808 International Field Study: Emerging Markets G 4

Course will expand global perspective of business; offer opportunity to apply skills in an emerging market and explore growth strategies of international companies.

Wi Qtr. 2 2-hr cl plus spring break study abroad. Prereq: Permission of instructor and completion of successful interview. Students must participate in field study taken during spring break. Repeatable to a maximum of 8 cr hrs. Full-time MBA's given first priority.

### 810 Finance-Making Investment Decisions G 4

The development of an understanding of financial terminology, instruments, and foundations for analyzing and dealing with the financial management problems of business enterprises.

Wi Qtr. Prereq: Enrollment in structured MBA.

### 811 Financial Decision Making G 4

Analysis of financial management through case study; financial concepts and techniques used to identify problems, feasible alternatives, and recommendations of best course of action.

Wi Qtr. Prereq: Enrollment in structured evening MBA.

### 812 Managerial Economics G 4

This course approaches microeconomics from a management and organizational perspective. The objective is to develop a framework grounded in the fundamentals of economic theory.

Au Qtr. 2 2-hr cl. Prereq: Enrollment in structured MBA Program.

### 813 National Business Conditions Analysis G 4

Analysis of general economic conditions and their relation to decisions of the firm; methods for decision support and strategic planning.

Su Qtr. 2 2-hr cl Prereq: Enrollment in structured evening MBA Program.

### 831 Management Information Systems G 2

The study of the role of the information systems function in organizations and the role of information in the management decision-making process.

Au Qtr. 2 2-hr cl for 5 weeks. Prereq: Enrollment in structured MBA. Not open to students with credit for 832.

### 832 Information Systems for Management Decision Making G 4

Focuses on managing the information environment through an understanding of the trends in information technology and how they may affect organizations.

Au Qtr. Not open to students with credit for 831.

### 840 Marketing Management G 4

Focuses on the interrelated elements of the marketing mix, its relationship with the other functional areas of management, and marketing responses to the external environment.

Wi, Sp Qtrs. Prereq: Enrollment in structured MBA or evening MBA program.

### 850 Operations Management G 3

Introduction to basic operations principles; exploration of major operating problems; strategic and tactical decision making; emphasis on determination of policy for managing productive resources; role of operations manager.

Wi Qtr. 2 2-hr cl for 8 weeks. Prereq: Enrollment in structured MBA.

### 851 Competing on Operations G 4

Managing operations as a means for competing in global markets: analyzing processes; capacity; quality; inventory policies in both service and manufacturing settings.

Sp Qtr. Prereq: Enrollment in structured evening MBA program.

### 860 Organizational Behavior and Teamwork Skills G 3

An overview of factors that influence individual work performance and techniques to improve it; analytical frameworks for determining effectiveness of given techniques in specific circumstances.

Au, Sp Qtrs. 2 2-hr cl for 7-8 weeks. Prereq: Enrollment in structured MBA. Repeatable to a maximum of 6 cr hrs.

### 861 Advanced Issues in the Management of Individual Behavior G 4

Additional discussion of factors that influence individual work performance and techniques to improve it; analytical frameworks for determining effectiveness of given techniques in specific circumstances.

Au Qtr. 2 2-hr cl Prereq: Enrollment in structured evening MBA program.

### 870 Business Statistics G 4

Introduction to statistical inference and its use in decision making; major emphasis on achieving an application-oriented understanding of regression analysis.

Au Qtr. Prereq: Enrollment in structured MBA.

### 871 Decisions and Decision Models G 2

The use of quantitative techniques in practical decision-making situations; emphasis on concepts with relatively little mathematics utilized to describe the techniques.

Wi Qtr. 2 2-hr cl. Prereq: Enrollment in structured MBA.

### 872 Optimization Models for Decision Making G 4

Industries must decide how to allocate limited resources to competing activities. This course describes how optimization models can provide information and insight into this decision.

Wi Qtr. 2 2-hr cl. Prereq: Enrollment in structured evening MBA program.

### 880 Legal and Regulatory Environment G 2

Focuses on the application of law to managerial decisions; designed to provide an appreciation and understanding of the relationship between legal and business strategy.

Sp Qtr. 1 2-hr cl. Prereq: Enrollment in structured MBA.

### 893 Individual Studies G 1-5

Individual study projects in selected areas in business not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

### 894 Group Studies G 1-5

Students are given an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 16 cr hrs.

### 980 Strategy Formulation and Implementation I G 4

Introduction to the nature of corporate strategy, development of a conceptual framework for understanding competition in industries, and the factors that shape competitive success or failure.

Su, Sp Qtrs. Prereq: Successful completion of the 1st yr of structured MBA.

### 981 Strategy Formulation and Implementation II G 4

Introduction to the strategic significance of social, political, and governmental forces as well as the role financial control systems play in implementing and evaluating strategy.

Wi Qtr. Prereq: 980. Enrollment in structured evening MBA program.

## Materials Science and Engineering

477 Watts Hall, 2041 College Road, 292-2553

[www.osu.edu/mse](http://www.osu.edu/mse), [mse@osu.edu](mailto:mse@osu.edu)

### 194 Group Studies U 1-6

Special topics.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**205 Introduction to Materials Science and Engineering U 3**

Structure, processing, properties, and applications of metals, ceramics, polymers, and composite materials.

Su, Au, Wi, Sp Qtrs. 3 1-hr lectures, 1 1-hr rec. Prereq: Math 141 or 151 or 161; Physics 131, and Chem 121 or Chem H201.

**294 Group Studies U 1-6**

Special topics.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

**394 Group Studies U 1-6**

Special topics.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

**401 Materials Thermodynamics U 4**

First three laws of thermodynamics; phase equilibria; reaction equilibria; solution theory; phase diagrams.

Sp Qtr. 3 1-hr lec, 1 2-hr rec. Prereq: Physics 132, and Math 254 or 263, and minimum CPHR of 2.0; prereq or concur: Chem 123 or 125.

**489 Professional Practice in Industry U 2**

Preparation of a comprehensive report based on employment experience in a co-op job in industry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to co-op program. Repeatable to a maximum of 8 or hrs. This course is graded S/U.

**494 Group Studies U 1-6**

Special topics.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

**521 Chemistry of Materials****521.01 Chemistry of Materials U G 3**

Stoichiometry and heat balances for reactions and processes. Thermodynamics and kinetics of selected reactions.

Au Qtr. 3 1-hr cl. Prereq: Physics 132, Math 254, Chem 121, and MatSc&En 205.

**521.02 Materials Chemistry Laboratory I U G 2**

Understanding of phenomena related to diffusion and kinetics.

Au Qtr. 1-hr lecture and 2-hr lab. Prereq: 521.01 or concur. GEC course.

**522 Transport Phenomena in Materials Processing****522.01 Transport Phenomena in Materials Processing U G 3**

Fluid flow, heat, and mass transfer as applied to materials processes.

Wi Qtr. 3 1-hr cl. Prereq: 205, Physics 132, Math 254, and Chem 121.

**522.02 Materials Chemistry Lab II U G 2**

Techniques related to characterization of particles, flow behavior and temperature measurement.

Wi Qtr. 1-hr lecture and 2-hr lab. Prereq: 522.01 or concur. GEC course.

**523 Ceramic Phase Equilibria U G 3**

Principles of phase diagrams, use of equilibrium diagrams in ceramic engineering.

Sp Qtr. 3 1-hr cl. Prereq: 205, Physics 132, Math 254, and Chem 121.

**541 Materials Structure U G 3**

Crystal structure and defects in metals, ceramics, and polymers.

Au Qtr. 3 1-hr cl. Prereq: Physics 132, Math 254, Chem 121, and MatSc&En 205.

**542 Materials Structure II****542.01 Phase Diagrams, Diffusion, and Microstructures U G 3**

Phase equilibria, solid state diffusion, and introduction to transformations and relation to microstructures.

Wi Qtr. 3 1-hr cl. Prereq: 401 or 521.01.

**542.02 Phase Diagrams, Diffusion, and Microstructures Laboratory U G 2**

Experiments and report writing in support of MSE 542.01.

Wi Qtr. 1-hr lecture and 2-hr lab. Prereq: 542.01 or concurrent registration. GEC course.

**543 Phase Transformations U G 3**

Structural transformations in materials. Thermodynamics and kinetics of nucleation, growth, sintering, precipitation, and martensitic reactions.

Sp Qtr. 3 1-hr cl. Prereq: 542.01.

**561 Mechanical Properties of Engineering Materials U G 3**

Continuum and microstructural aspects of mechanical behavior; elastic and plastic behavior under simple and combined stress systems.

Wi Qtr. 3 1-hr cl. Prereq: Physics 132, Math 254, Chem 121, MatSc&En 205, and Eng Mech 440 or Mech Eng 420 or 440 or concur.

**562 Failure of Engineering Materials****562.01 Failure of Engineering Materials U G 3**

Fundamentals of brittle and ductile failure; continuum and microstructural aspects.

Sp Qtr. 3 1-hr cl. Prereq: 561.

**562.02 Mechanical Properties Laboratory U G 1**

Selected laboratory experiments of elastic properties, plastic properties, and failure of engineering materials.

Sp Qtr. 1-hr lecture and 2-hr lab. Prereq: 562.01 or concurrent registration.

**565 Crystal Mechanics U G 3**

Relationship of mechanical properties to the microstructure of crystalline materials.

Sp Qtr. 3 1-hr cl. Prereq: 541.

**571 Characterization of Materials****571.01 Characterization of Materials U G 3**

Techniques and applications of thermal analysis, x-ray diffraction and scanning electron microscopy.

Sp Qtr. 3 1-hr lec. Prereq: Physics 132, Math 254, Chem 121, and MatSc&En 205, or equiv or permission of instructor.

**571.02 Characterization of Materials Lab U G 2**

Use of thermal analysis, x-ray diffraction and scanning electron microscopy for analysis of selected metallic, ceramic and composite materials.

Sp Qtr. 1-hr lec, 2-hr lab Prereq: 571.01 concurrent. GEC course.

**589 Industrial Experience U 2**

Preparation of a comprehensive report based on employment experience in a co-op program.

Su, Au, Wi, Sp Qtrs. Not available for technical elective credit. Repeatable to a maximum of 8 or hrs. This course is graded S/U.

**594 Group Studies U G 1-6**

Special topics.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

**602 Analysis of Die Casting Processes U G 3**

Fundamental principles underlying the die casting process; integration of cast component design, process requirements and economics.

Wi Qtr. 2 1.5-hr cl. Prereq: Grad or sr standing in Engineering or the physical sciences. Offered even-numbered academic years. Cross-listed in Industrial and Systems Engineering.

**605 Principles of Materials Science U G 4**

A quantitative survey of processing, structure, and properties relationships in engineering materials. A quantitative introduction for students with non-MatSc&En technical backgrounds.

Au Qtr. 2 2-hr cl. Prereq: Physics 132, Math 254, Chem 121, and MatSc&En 205, or permission of instructor. Not open to Metal En/Ceram En/MatSc&En majors.

**610 Analyses of Casting Defects U G 3**

To enable students to identify common casting defects, understand their origins, and learn to control and/or eliminate casting defects.

Wi Qtr. 3 1-hr cl. Prereq: 205, Physics 132, Math 254, and Chem 121. Offered odd-numbered academic years.

**611 Metal Processing (Casting & Powder Metallurgy) U G 3**

Near net shape manufacturing via solidification and powder metallurgy methods.

Sp Qtr. 2 1-hr. cl, 1 2-hr. lab. Prereq: Physics 132, Math 254, Chem 121, and MatSc&En 205 or equiv.

**612 Structure of Ceramic Materials U G 3**

Structure of crystalline materials including silicates and technical ceramics, crystal chemistry and physics.

Au Qtr. 3 1-hr cl. Prereq: Physics 132, Math 254, Chem 121, and MatSc&En 205.

**621 Materials Issues in Microelectronics****621.01 Materials Issues in Microelectronics U G 3**

Microfabrication with emphasis on processing, structure, and stability of materials in microelectronics.

Wi Qtr. 3 1-hr cl. Prereq: 205, 671, Physics 132, Math 254, and Chem 121.

**621.02 Microelectronics Processing Lab U 1**

Laboratory experience in microelectronics processing.

Wi Qtr. 5-hr lecture and 2.5-hr lab. Prereq: 621.01 or concurrent registration.

**623 Ceramic Raw Materials U G 3**

Ceramic raw materials including physical and chemical characteristics; powder preparation, mixing, milling, and batch calculations.

Au Qtr. 3 1-hr cl. Prereq: 205, Physics 132, Math 254, and Chem 121.

**624 Forming of Ceramics U G 3**

Theoretical and practical aspects of ceramic processing before firing. Relationship between forming methods and the flow properties of particulate systems.

Wi Qtr. 3 1-hr cl. Prereq: 623.

**625 Thermal Processing of Ceramics U G 3**

Ceramic drying and firing processes. Emphasis is on microstructure development: calcining, solid state sintering, liquid phase sintering, vitrification, and grain growth.

Sp Qtr. 3 1-hr cl. Prereq: 624.

**630 Process Metallurgy U G 3**

Mass transfer as applied to metallurgical processes, reactor design, analysis and design of processes for extracting and refining metals.

Sp Qtr. 3 1-hr cl. Prereq: 205, Physics 132, Math 254, and Chem 121.

**632 Glass Science U G 3**

The science of glass including glass structure and formation related to composition, kinetics of crystallization, phase separation, glass transition, and viscosity.

Wi Qtr. 3 1-hr cl. Prereq: Physics 132, Math 254, Chem 121, and MatSc&En 205.

**633 Refractories Technology U G 3**

An introduction to refractory raw materials and their formulation as industrial refractories; consideration of applications, testing, engineering, and technical concepts.

Sp Qtr. 3 1-hr cl. Prereq: 521.01. Offered even-numbered academic years.

**642 Polymer Science and Engineering U G 3**

Principles of polymer science and engineering and the important concepts that distinguish plastics from inorganic materials. Structure/property relationships that drive new applications.

Au Qtr. 3 1-hr cl. Prereq: Physics 132, Math 254, Chem 121, and MatSc&En 205.

**651 Physical Metallurgy of Steel****651.01 Physical Metallurgy of Steel U G 3**

Physical metallurgy of plain carbon and alloy steels.

Au Qtr. 3 1-hr cl. Prereq: 542.01.

**651.02 Microstructures of Metallic Materials U 1**

Laboratory studies of microstructural characteristics of metallic materials and the effects of prior treatments or methods of manufacture.

Wi Qtr. 1 3-hr lab. Prereq: 542.01 and 651.01 or concurrent registration.

**653 Ceramic Properties and Processing Laboratory U G 1**

Processing and properties of ceramic materials.

Wi Qtr. 1 3-hr lab. Prereq: Physics 132, Math 254, Chem 121, and MatSc&En 205.

**655 Non-Ferrous Metallurgy U G 3**

Physical metallurgy of important non-ferrous alloys; their properties and applications.

Wi Qtr. 3 1-hr cl. Prereq: 205, Physics 132, Math 254, and Chem 121.

**H659 Sensor Materials: A Multidisciplinary Approach U G 3**

A multidisciplinary approach dealing with sensor materials, synthesis, fabrication, characterization, and modeling; focus on problem solving, group work, communication, and industrial experience.

Sp Qtr. 2 1.3-hr cl, lab hrs arr. Prereq: Sr standing in engineering or physical sciences, or permission of instructor. Not open to students with credit for Chem 694 Sp Qtr 2001 or Physics H659. Cross-listed in Physics.

**666 Deformation Processing U G 3**

Continuum behavior of metals; analysis of common forming operations; slab calculations, ideal work methods, upper bound analysis, other numerical methods.

Wi Qtr. 3 1-hr cl. Prereq: Mech Eng 420 or 440.

**671 Electronic Properties of Metals and Semiconductors U G 3**

Electronic theory of solids, metals, semiconductors, and insulators. Principles and fabrication of simple semiconductor devices.

Au Qtr. 3 1-hr cl. Prereq: 205, Physics 132, Math 254, and Chem 121.

**672 Electronic Properties of Ceramics U G 3**

Continuation of Materials Science and Eng 671. Magnetic, optical, dielectric, and superconducting properties of materials. Behavior of simple devices based on these properties. Materials issues in device fabrication.

Wi Qtr. 3 1-hr cl. Prereq: 671.

**680 Analysis and Modeling in Materials Science U G 3**

Applications of analytical and numeric mathematical methods to problems in materials science.

Au Qtr. 3 1-hr cl. Prereq: 205, Physics 132, Math 254, and Chem 121.

**681 Corrosion U G 3**

Principles of corrosion engineering; definitions, types of corrosive attack and methods of minimization and prevention.

Au Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: Sr standing in Engineering or MAPS.

**684 Structure and Properties of Composite Materials U G 3**

Structure and properties of polymer matrix, metal matrix, and ceramic matrix composites. Tailoring of properties by composite design.

Wi Qtr. 3 1-hr cl. Prereq: 543 and 561.

**685 Materials Selection U G 3**

Case studies in materials selection and substitution of competing materials.

Sp Qtr. 3 1-hr cl. Prereq: 4th yr standing in MatSc&En, Metal En, or Ceram En.

**693 Individual Studies U G 1-6**

Investigations in areas of advanced non-thesis research. Library and/or research investigations are under the close direction of instructors. Comprehensive report required.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Special topics.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**695 Senior Design Project**

An in-depth design project to foster independent thinking and to develop problem solving skills.

Au, Wi, Sp Qtrs. Arr.

**695.01 Senior Design Project in Materials Science and Engineering I U 1**

Analysis of design problem and formulation of approach to solve problem.

Prereq: Senior standing in MSE or the physical sciences. Must be scheduled in the first 2 qtrs of academic year of projected graduation.

**695.02 Senior Design Project II U 2**

Execution of design projects with written and oral reports.

Prereq: 695.01.

**705 Thermal Methods of Characterization U G 3**

Introduction to thermal analysis for characterizing materials for seniors and grad students in engineering and sciences.

Sp Qtr. 2 1.5-hr cl. Prereq: Sr standing in engineering or science, or permission of instructor. Offered even-numbered academic years.

**711 Solidification of Metals and Alloys U G 3**

Heat and mass transport associated with solidification; grain morphologies and composition in casting and welds.

Au Qtr. 3 1-hr cl. Prereq: 542.01 or grad standing in MatSc&En or permission of instructor. Offered even-numbered academic years.

**715 Principles of the Characterization of Materials U G 3**

Fundamentals of beam-solid interactions and their application to the characterization of materials.

Sp Qtr. 3 1-hr cl. Prereq: Math 415 or grad standing in MatSc&En or permission of instructor.

**721 Metallurgical Transport Phenomena U G 3**

Momentum, mass, and heat transport as related to metallurgical processing with computer computation of complex problems.

Sp Qtr. 3 1-hr cl. Prereq: 521.01, En Graph 167, Math 255 or 415, or grad standing in MatSc&En, or permission of instructor. Offered even-numbered academic years.

**723^\* Powder Science U G 3**

Scale and importance of high temperature particle interactions and particle structure formation.

Wi Qtr. 3 1-hr cl. Prereq: 401, 205, 405 or grad standing in MatSc&En or permission of instructor. Offered odd-numbered academic years

**730 Thermodynamics of Materials U G 4**

Thermodynamics of mixtures and phase equilibria relevant to metallurgy and materials science.

Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**731 Physical Properties of Glass U G 3**

Viscosity, chemical durability and thermal, electrical, optical, and mechanical properties of commercial glasses. Effects of thermal history and composition.

Sp Qtr. 3 1-hr cl. Prereq: 632 or grad standing in MatSc&En or permission of instructor. Offered even-numbered academic years.

**732 Kinetics and Diffusion U G 4**

To provide a detailed understanding of the phenomenological and atomic description of rate limiting steps, diffusion and chemical reaction, during mass transport in solid state materials.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in MatSc&En or permission of instructor.

**735 Advanced Corrosion U G 3**

Theories and mechanisms of corrosion.

Wi Qtr. 3 1-hr cl. Prereq: Grad standing in MatSc&En or permission of instructor.

**736<sup>^</sup> High Temperature Corrosion U G 3**

Corrosion of metals and alloys in high-temperature gases and salts.

Sp Qtr. 3 1-hr cl. Prereq: Grad standing in MatSc&En or permission of instructor. Offered odd-numbered academic years.

**741 Transmission Electron Microscopy Laboratory G 1**

Application of transmission electron microscopy of materials with emphasis on practical experimental methods.

Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq: 715 or equiv.

**745 Structure of Materials U G 4**

Crystallography and crystal structures, effect of symmetry on properties of crystals, and structures of amorphous materials.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in MatSc&En or permission of instructor.

**750 Materials Microstructures U G 3**

Nature and kinetics of microstructural changes produced by cold work and subsequent aging in ductile materials. Homogeneous and heterogeneous nucleation. Dislocations in crystalline materials with emphasis on FCC materials.

Wi Qtr. 2 1.5-hr cl. Prereq: Grad standing in MatSc&En or permission of instructor.

**765 Mechanical Behavior of Materials G 3**

Mechanical response of materials to loads and deformation.

Sp Qtr. 2 1.5-hr cl. Prereq: Grad standing in MatSc&En or permission of instructor.

**H783 Honors Research U 1-3**

Honors level analysis of design problem, formulation of approach to solve problem, and execution of design project with written and oral reports.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in MatSc&En. Repeatable to a maximum of 3 cr hrs. Must be scheduled in first two quarters of academic year of projected graduation.

**793 Individual Studies U G 1-6**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. This course is graded S/U.

**795 Graduate Seminar and Colloquium U G 1**

Discussion of current thesis problems, outstanding current literature and related topics in Materials Science and Engineering.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs. Required of all grad students in MatSc&En each quarter (Su excluded). Up to 6 hrs may be applied toward a masters degree and up to 12 hrs may be applied toward a doctorate degree. This course is graded S/U.

**831<sup>^</sup> Advanced Physics and Chemistry of Glasses G 3**

Glass structure and formation related to composition, kinetics of crystallization, phase separation, glass transition. Relation of physical properties to glass structure and composition.

Au Qtr. 3 1-hr cl. Prereq: 632 or equiv, or permission of instructor. Offered odd-numbered academic years

**835 Point Defects in Crystalline Materials G 3**

A thermodynamic and electrochemical treatment of the formation, concentrations, mobilities, and interactions of atomic, ionic, and electronic point defects in materials at high temperatures.

Wi Qtr. 3 1-hr cl. Prereq: 730 or permission of instructor. Offered even-numbered academic years.

**845<sup>^</sup> Solid Surfaces and Interfaces G 3**

Thermodynamics and structure of surfaces and interfaces.

Au Qtr. 3 1-hr cl. Prereq: 730, 732, 745. Offered odd-numbered academic years.

**850 Structural Transformations G 3**

Structural transformations in materials with emphasis on basic phenomena. Selected topics will be developed based on classical approaches and recent advances.

Wi Qtr. 2 1.5-hr lec. Prereq: 730, 750. Offered even-numbered academic years.

**855 Electron Diffraction G 3**

Construction, image formation, and performance of electron microscopes. Electron diffraction in crystals. Wave-Optical and Wave-Mechanical forms. Au Qtr. 2 1.5-hr cl. Prereq: 715. Offered even-numbered academic years.

**861 Plasticity G 3**

Continuum and micromechanisms of plastic deformation.

Au Qtr. 2 1.5-hr cl. Prereq or concur: 765, or permission of instructor. Offered even-numbered academic years

**862<sup>^</sup> Microstructural Elasticity G 3**

Interaction of elastic defects in crystalline and continuum solids.

Au Qtr. 2 1.5-hr cl. Prereq or concur: 765, or permission of instructor. Offered odd-numbered academic years.

**863 Elevated Temperature Deformation G 3**

Micromechanics of elevated temperature deformation.

Wi Qtr. 2 1.5-hr cl. Prereq or concur: 765, or permission of instructor. Offered even-numbered academic years.

**864 Fatigue of Materials G 3**

An overview of the mechanics and mechanisms of fatigue in metals and non-metals. Will include state-of-the-art fatigue concepts and applications of fatigue theory to structural life prediction.

Sp Qtr. 3 1-hr cl. Prereq: Undergraduate courses in mechanical and materials science. Offered even-numbered academic years.

**881 Advanced Topics in Corrosion Science G 3**

In-depth understanding of the critical issues in the corrosion of metals, and methods for prevention, control, and experimentation.

Sp Qtr. 2 1.5-hr cl. Prereq: 735 or permission of instructor. Offered even-numbered academic years.

**893 Individual Studies G 1-6**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**894 Group Studies G 1-6**

Special advanced topics.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**995 Advanced Topics**

Individual study, presentation, and group discussion of topics of current interest in materials science and engineering.

Sp Qtr. 1 1-hr cl. Prereq: PhD candidacy in MSE or permission of instructor.

**995.01 Topics in Microstructure and Characterization G 1**

Repeatable to a maximum of 3 cr hrs.

**995.02 Topics in Mechanical Behavior and Solid Processing G 1**

Repeatable to a maximum of 3 cr hrs.

**995.03 Topics in Chemical Behavior and Liquid Processing G 1**

Repeatable to a maximum of 3 cr hrs.

**995.04 Topics in Physical Properties G 1**

Repeatable to a maximum of 3 cr hrs.

**999 Research in Materials Science and Engineering G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable. This course is graded S/U.

## Mathematical and Physical Sciences, College of

425 Stillman Hall, 1947 College Road, 292-2874

**100 Mathematical and Physical Sciences Survey U 1**

Academic requirements, University procedures, grading system, resources; student rights and responsibilities; overview of Mathematical and Physical Sciences areas of study, Arts and Sciences services.

Au Qtr. H100 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Agr Int 100, Arts Col 100.01 or 100.02, Arts&Sci 100 or 100.01 or 100.02, Bio Sci 100, Engineer 100, Hum Col 100, SBS Col 100, or any decimal subdivision of Univ Col 100. This course is graded S/U.



## Mathematics

Mathematics Tower, 231 West 18th Avenue, 292-4975

### 050 Precollege Mathematics I U 5

Arithmetic of fractions and decimals, basic algebra, graphing equations, geometry, exponents, applications of exponents, lines and slopes, area. Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for any higher numbered math course. Credit will not count toward graduation in any degree program.

### 075 Precollege Mathematics II U 4

Systems of equations, arithmetic of polynomials, factoring, fractional equations, variation, quadratic equations, functions, graphs, right angle trig. Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 050 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for any math course except 050. Credit will not count toward graduation in any degree program.

### 076 Reentry Precollege Mathematics U 4

Systems of equations, arithmetic of polynomials, factoring, fractional equations, variation, quadratic equations, functions, graphs, and right angle trig.

Au, Sp Qtrs. 4 cl. Prereq: At least one yr of high school algebra, out of high school for 5 or more yrs at time of university enrollment, no formal training in math in the past 5 yrs, and written permission of Dept of Mathematics Office. Not open to students with a mark in any Ohio State math course within the past 5 yrs. Credit will not count toward graduation in any degree program.

### 103 Enrichment of Basic College Mathematics U 2

Supplement to Math 104 using small group interaction and active learning to enhance the development of skills necessary to succeed in 104 and subsequent courses.

Au Qtr. 2 cl. Prereq: New first quarter freshman, no math admission condition, and Math Placement T or S; concur: 104. This course is not repeatable under any circumstances (not through audit, repeating a D, repeating an E or NP, Fresh Start, Freshman Forgiveness, transfer credit, or any other means). Credit may not count toward graduation in some degree programs.

### 104 Basic College Mathematics U 5

Systems of equations, arithmetic of polynomials, rational expressions, factoring, fractional equations, inequalities, exponents, quadratic equations, absolute values, functions, and graphs.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 050 or satisfactory score on Ohio State Math Placement Test or permission of dept. Not open to students with credit for 130, or 148, or 150, or 151; or to students with credit for 116 prior to Au Qtr 1993. Credit may not count toward graduation in some degree programs.

### 105 Fundamental Mathematics Concepts for Teachers I U 5

Development of basic ideas of arithmetic, algebra and geometry as appropriate for school teachers.

Au, Wi Qtrs. 5 cl. Prereq: 075 or 076 or satisfactory score on Ohio State Math Placement Test. 105N open only to Rank 4 and GRD EDU students, and to students who've applied to GRD EDU.

### 106 Fundamental Mathematics Concepts for Teachers II U 5

Continuation of 105.

Wi, Sp Qtrs. 5 cl. Prereq: 105 or written permission of dept. 106N open only to Rank 4 and GRD EDU students, and to students who've applied to GRD EDU.

### 107<sup>A</sup> Topics in Mathematics for Elementary Teachers U 5

Further topics in mathematics selected by the instructors to broaden the mathematical perspectives of elementary teachers.

Sp Qtr. 5 cl. Prereq: 106 or written permission of dept.

### 116 Excursions in Mathematics U 5

Critical thinking and problem solving, with relevant topics met in everyday life; appropriate for non-physical sciences.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 075 or 076 or 104 or satisfactory score on mathematics placement test. Not open to students with credit for 153.

### 117 Survey of Calculus U 5

An introduction to differential and integral calculus.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 130 or 150 or equiv with written permission of dept. Not open to students with credit for 132 or 151. This course is not designated for students pursuing majors in business or the sciences.

### 130 Mathematical Analysis for Business I U 4

Equations, inequalities, absolute value, polynomial functions, exponential and logarithmic functions, applications to business.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 104 or placement M or N on the OSU Math placement test, or written permission of department. Not open to students with credit for 150 or higher numbered mathematics course; or to students with credit for 148 completed Au 97 or earlier. This course is available for EM credit.

### 131 Mathematical Analysis for Business II U 4

Matrices, determinants, linear programming, interpretation of graphs, modeling, applications.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 130 or 148 or 150 or written permission of dept. Not open to students with credit for 151.

### 132 Mathematical Analysis for Business III U 5

Limits, derivatives of polynomial, logarithmic and exponential functions, sigma notation, area under curves, the definite integral, and applications to business.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 130 or 150. Not open to students with credit for 152.

### 140 Calculus with Review I U 5

Review of polynomial and rational functions, difference quotients, limits, continuity, derivatives, chain rule, higher order derivatives, implicit differentiation, related rates.

Au Qtr. 5 cl. Prereq: Course Code N placement and 4 or more units of college prep math, including trigonometry; or written permission of dept. Not open to students with credit for 151. The first part of a two-part sequence that consolidates the material of Math 148, 150, 151. The follow up course is Math 141. Students who do not succeed in this course must go back to Math 148.

### 141 Calculus with Review II U 5

Trigonometric review, differentiation of the trigonometric functions, review of exponential and logarithmic functions, mean value theorem, applications to curve sketching, applied maxima and minima problems.

Wi Qtr. 5 cl. Prereq: Grade of C- or better in 140. Not open to students with credit for 151. The second of a two-part sequence that consolidates the material from 148, 150 and 151 into two courses and prepares students for 152.

### 148 Algebra and Trigonometry and Their Applications U 4

Applications from chemistry, physics and biology involving integer and rational exponents, solving and graphing linear and quadratic equations, systems of equations, trigonometry of acute angles, vectors and exponential equations.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 104 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 150 or higher numbered mathematics course.

### 150 Elementary Functions U 5

Inverse functions, logarithmic, exponential and trigonometric functions, and their graphs; complex numbers.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 148 or satisfactory score on Ohio State Math Placement Test or permission of dept. This course is available for EM credit.

### 151 Calculus and Analytic Geometry U 5

Limits, continuity, derivatives, Mean Value theorem, extrema, curve sketching, related rates, differentiation of the trig, log, and exponential functions.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 150 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 161. This course is available for EM credit.

### 152 Calculus and Analytic Geometry U 5

Integral, area, fundamental theorems of calculus, logarithmic and exponential functions, trigonometric and inverse trigonometric functions, methods of integration, applications of integration, polar coordinates.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 141 or 151. Not open to students with credit for 162. This course is available for EM credit.

### 153 Calculus and Analytic Geometry U 5

Indeterminate forms, Taylor's formula, improper integrals, infinite series, parametric curves, and vectors in the plane; vectors, curves, and surfaces in space.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 152. Not open to students with credit for 263. This course is available for EM credit.

### 161 Accelerated Calculus with Analytic Geometry U 5

Functions, limits and continuity, derivatives, applications of the derivative, the integral, inverse functions.

Au Qtr. 5 cl. H161 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Course Code L placement and high school calculus experience or permission of dept; prereq for H161: Math 151 or permission of dept. 161 not open to students with credit for 152; H161 has no exclusion. The sequence 161-162-263 covers calculus at an accelerated pace for students with superior algebraic and geometric skills, and with previous calculus experience.

### 162 Accelerated Calculus with Analytic Geometry U 5

Techniques of integration; improper integrals; applications of the integral; polynomial approximations and Taylor's theorem; infinite sequences and series; tests for convergence; vectors, lines and planes.

Wi Qtr. 5 cl. H162 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 161 or written permission of Math Counseling Office. Not open to students with credit for 153.

**188 Invitation to Actuarial Science U 1**

Introduction to some basic ideas of life, health, and property and casualty insurance; presentations by practicing actuaries on aspects of the actuarial profession.

Sp Qtr. 12-hr cl. Prereq: 151, 161, H161, or H190; or permission of instructor. This course is graded S/U.

**H190 Elementary Analysis I U 5**

Special course sequence for superior students.

Au Qtr. 5 cl. Prereq: Permission of dept. H190, H191, and H264 substitute for 151, 152, 153, 254, and 551.

**H191 Elementary Analysis II U 5**

Continuation of H190.

Wi Qtr. 5 cl. Prereq: H190 with a grade of C or better or written permission of Honors Committee chairperson.

**194 Group Studies in Mathematics U 2-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs.

**254 Calculus and Analytic Geometry U 5**

Partial differentiation, Lagrange multipliers, multiple integrals, line integrals, and Green's theorem.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 153. Not open to students with credit for 263. This course is available for EM credit.

**255 Differential Equations and Their Applications U 5**

Basic concepts and methods in solving ordinary differential equations, first and second order, linear differential equations, series solutions, numerical methods, Laplace transforms, physical applications.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 254. Not open to students with credit for 415 or 556.

**263 Accelerated Calculus with Analytic Geometry U 5**

Multivariable calculus (vector approach), line and surface integrals, vector differential operators.

Sp Qtr. 5 cl. H263 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 162 or written permission of Math Counseling Office.

**H264 Elementary Analysis III U 5**

Continuation of H191; a rigorous treatment of multivariable calculus including gradients, multiple integrals, line and surface integrals, Green's theorem, the divergence theorem, and Stokes' theorem.

Sp Qtr. 5 cl. Prereq: H191 with a grade of C or better or written permission of Honors Committee chairperson.

**283 Number Theory**

An intensive introduction to mathematics as problem-solving; experimentation, conjecture and proof; divisibility, quadratic fields, geometry of numbers.

Su Qtr. Prereq: Written permission of instructor and performance on a take-home problem set.

**283.01 Lectures in Number Theory U 3-6**

5 cl for 8 wks. Repeatable to a maximum of 6 cr hrs.

**283.02 Seminar in Number Theory U 3-6**

3 1-hr seminar/wk for 8 wks. Repeatable to a maximum of 6 cr hrs.

**294 Special Topics in Mathematics U 2-5**

Designed to give groups of able students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. H294 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs.

**345 Foundations of Higher Mathematics U 4**

Designed to prepare students for higher mathematics; an introduction to logic, proof techniques, set theory, number theory, integers, real numbers.

Au, Sp Qtrs. 4 cl. Prereq: 254 or equiv with written permission of dept.

**366 Discrete Mathematical Structures I U 3**

Mathematical formalization and reasoning, logic, and Boolean algebra; sets, functions, relations, recursive definitions, and mathematical induction; and elementary counting principles.

Su Term 1, Au, Wi, Sp Qtrs. 3 cl. Prereq: 132 or 152 or permission of dept.

**414 Differential Equations for Engineering Applications U 3**

Introduction to the basic methods for solving ordinary and partial differential equations, and some applications.

Sp Qtr. 3 cl. Prereq: 254; concur: Aero Eng 414; or permission of instructor. Not open to students with credit for 255 or 415. This course is linked to Aero Eng 414 where significant engineering applications will be presented. Students enrolled in this course must be simultaneously enrolled in Aero Eng 414.

**415 Ordinary and Partial Differential Equations U 4**

Ordinary, partial, linear, and nonlinear differential equations; Fourier series; boundary value problems; and Bessel functions.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 254. Not open to students with credit for 255.

**H487 Advanced Problem Solving U 2**

An advanced enrichment course for interested and capable students.

Au Qtr. 2 cl. Prereq: Permission of dept. Not open to students with 6 cr hrs in 487. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**504 History of Mathematics U G 5**

Development of mathematics from primitive origins to present form; topics include: development of arithmetic, algebra, geometry, trigonometry, and calculus.

Su, Sp Qtrs. 5 cl. Prereq: 580 or 568 or 507 or equiv with written permission of dept.

**507 Advanced Geometry U G 5**

Advanced topics from Euclidean Geometry.

Au, Wi Qtrs. 5 cl. Prereq: H264 or 345 or grad standing.

**512 Partial Differential Equations and Boundary Value Problems U G 3**

Fourier series, orthogonality relations, vibrating string, steady state heat, Laplace transform, and applications.

Su Term 1, Au, Wi, Sp Qtrs. 3 cl. Prereq: 255 or 415 or equiv with written permission of dept. Not open to students with credit for 557.

**513 Vector Analysis for Engineers U G 3**

Vector algebra, vector operators, line integrals, vector integral theorems, curvilinear coordinates; applications.

Au, Wi Qtrs. 3 cl. Prereq: 254. Not open to students with credit for 551.

**514 Complex Variables for Engineers U G 3**

Introduction to complex variables, analytic functions, complex integral theorems, power series, residues, conformal mapping.

Sp Qtr. 3 cl. Prereq: 254 or equiv with written permission of dept. Not open to students with credit for 552 or 654.

**H520 Linear Algebra U 5**

Vector spaces, linear transformations, systems of equations, determinants, eigenvalues, spectral theorem, and Cayley-Hamilton theorem.

Au Qtr. 5 cl. Prereq: H263 with a grade of C or better, or H264 with a grade of C or better, or written permission of Honors Committee chairperson.

**H521 Differential Equations U 5**

Ordinary, linear and nonlinear differential equations, existence and uniqueness theorems, Fourier series, boundary value problems, systems, Laplace transforms, phase space, stability, and periodic orbits.

Wi Qtr. 5 cl. Prereq: H520 with a grade of C or better or written permission of Honors Committee chairperson.

**H522 Complex Analysis U 5**

Analytic functions, Cauchy integral theory, residue calculus, series representations, and conformal mapping.

Sp Qtr. 5 cl. Prereq: H521 with a grade of C or better or written permission of Honors Committee chairperson. The sequence H520-H521-H522 substitutes for 568 and 569; 255 or 415; 514 or 552.

**530 Probability U G 3**

Combinatorial probability, random variables, independence, expectations, variance.

Au Qtr. 3 cl. Prereq: 254.

**532 Mathematical Foundations of Actuarial Science U 3**

Problem workshop for applications of calculus and probability to actuarial science and risk management.

Sp Qtr. 2 1.25-hr cl. Prereq: 530 or Stat 520 or permission of instructor.

**H540\* Geometry and Calculus in Euclidean Spaces and on Manifolds I U G 5**

The topology of  $E^n$ , differentiation of vector valued functions, inverse and implicit function theorems, Riemann and Lebesgue integration in  $E^n$ .

Wi Qtr. 5 cl. Prereq: H520, or H263 and 569, or permission of instructor.

**H541\* Geometry and Calculus in Euclidean Spaces and on Manifolds II U G 5**

Curves and line integrals in  $E^n$ , tensor and exterior algebras, differential forms, integration on manifolds, divergence and Stokes' theorem and applications.

Sp Qtr. 5 cl. Prereq: H540 or permission of instructor.

**547 Introductory Analysis I U G 3**

547-548-549 is an integrated sequence in advanced calculus covering sequences, limits, continuous functions, differentiation, Riemann integral; infinite series, sequences and series of functions, Taylor series, improper integrals.

Au, Wi Qtrs. 3 cl. Prereq: 345 or equiv with written permission of dept. Not open to students with credit for 615.

**548 Introductory Analysis II U G 3**

Continuation of 547.

Wi, Sp Qtrs. 3 cl. Prereq: 547 or equiv with written permission of dept.

**549 Introductory Analysis III U G 3**

Continuation of 548; the Riemann-Stieltjes integral; an introduction to the calculus of several variables.

Au, Sp Qtrs. 3 cl. Prereq: 548 or equiv with written permission of dept.

**551 Vector Analysis U G 5**

Vector operations in three dimensions, vector operators, surface area, the theorems of Green and Stokes, the divergence theorem; applications.

Sp Qtr. 5 cl. Prereq: 254. Not open to students with credit for 513.

**552 Introduction to the Theory of Functions of a Complex Variable U G 5**

Topics discussed include power series expansions, the formula of Cauchy, residues, conformal mappings, and elementary functions in the complex domain.

Su Qtr. 5 cl. Prereq: 254. Not open to students with credit for 416 or 514.

**556^ Differential Equations I U G 3**

Systems of linear, first-order differential equations, existence and uniqueness theorems, numerical methods, qualitative theory (phase plane analysis, linearization, stability, limit cycles), and physical applications.

Wi Qtr. 3 cl. Prereq: 255, prereq or concur 572.

**557^ Differential Equations II U G 3**

Sturm-Liouville theory, partial differential equations in three or more variables, nonhomogeneous problems, Green's functions, physical applications.

Sp Qtr. 3 cl. Prereq: 556.

**560^ Point-set Topology U G 4**

Sets and functions, metric spaces, topological spaces, subspaces, limits, closure, interior, sequences, convergence, separation axioms, continuity, connectedness, compactness, product spaces, Euclidean spaces.

Sp Qtr. 4 cl. Prereq: 345 or written permission of dept.

**566 Discrete Mathematical Structures II U G 3**

Algorithms, efficiency of algorithms, pigeonhole principle, combinatorial identities, inclusion-exclusion, general functions, graphs, Euler tours, Hamiltonian cycles, isomorphism, planarity, colorings, algorithms on weighted graphs, and networks.

Su Qtr. 3 cl. Prereq: 366 or permission of dept.

**568 Introductory Linear Algebra I U G 3**

The space  $\mathbb{R}^n$  and its subspaces; matrices as mappings; matrix algebra; systems of equations; determinants; dot product in  $\mathbb{R}^n$ ; geometric interpretations.

Su Term 1, Au, Wi, Sp Qtrs. 3 cl. Prereq: 254 or equiv with written permission of dept. Not open to students with credit for 471 or 571.

**569^ Introductory Linear Algebra II U G 3**

Vector spaces over  $\mathbb{R}$  and  $\mathbb{C}$ ; linear transformations; the polynomial ring  $\mathbb{R}[x]$ ; characteristic values and vectors; inner product spaces; quadratic form reduction; principal axis theorem.

Su Term 2, Au, Wi, Sp Qtrs. 3 cl. Prereq: 568 or equiv with written permission of dept. Not open to students with credit for 572.

**571 Linear Algebra for Applications I U G 3**

Linear systems of equations; vector spaces, matrices, linear operators; inner products, projections and least squares, approximations or eigenvalue problems; applications.

Su Term 1, Au, Sp Qtrs. 3 cl. Prereq: 254. Not open to students with credit for 569 or 601.

**572 Linear Algebra for Applications II U G 3**

The eigenvalue problem or inner product spaces, projections and least squares approximation; classification of operators and quadratic forms; applications.

Su Term 2, Wi Qtr. 3 cl. Prereq: 571 or written permission of dept. Not open to students with credit for 601.

**573 Elementary Number Theory U G 5**

Utilization of concrete examples to introduce concepts of modern algebra; prime numbers, congruences, Diophantine equations, elementary combinatorial analysis.

Sp Qtr. 5 cl. H573 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 573: 153 or permission of dept. Prereq for H573: H191 and H520, or permission of instructor. Odd-numbered yrs only.

**575 Combinatorial Mathematics and Graph Theory U G 5**

Some classical puzzles of recreational mathematics; matching theory, graph theory, network flows, and optimization; enumeration techniques; combinatorial designs and coding theory.

Wi, Sp Qtrs. 5 cl. Prereq: 568 or written permission of dept.

**H576 Number Theory through History I U G 5**

The integrated honors sequence H576-H577 includes elementary analytic and algebraic number theory and traces its unifying role in development of mathematics through history.

Wi Qtr. 3 80-min cl. Prereq: H191 and H520, or permission of dept.

**H577 Number Theory through History II U G 5**

Continuation of H576.

Sp Qtr. 3 80-min cl. Prereq: H576 or permission of dept.

**578 Discrete Mathematical Models U G 5**

Analysis and solution of various applied problems using discrete mathematical models; methods used include graph theory, linear optimization, Markov chains and queues.

Au, Sp Qtrs. 5 cl. Prereq: 530 or Stat 427 or equiv, 568, and Cptr/Inf 221.

**580 Algebra I U G 3**

The integrated algebra sequence 580-581-582 includes elementary number theory, group theory, vector spaces, and linear transformations, field theory.

Au, Wi Qtrs. 3 cl. Prereq: 345 and prereq or concur: 568 or equiv with written permission of dept. Not open to students with credit for 613 or H590.

**581 Algebra II U G 3**

Continuation of 580.

Wi, Sp Qtrs. 3 cl. Prereq: 580.

**582 Algebra III U G 3**

Continuation of 581.

Au, Sp Qtrs. 3 cl. Prereq: 581.

**588 Practicum in Actuarial Science U 4**

Presentations by practicing actuaries on topics drawn from their fields of expertise; oral presentations by students on selected topics in actuarial science.

Sp Qtr. 1 2-hr cl. Prereq: 3rd yr standing and completion of second writing course. Open only to actuarial science majors.

**H590 Algebraic Structures I U G 5**

Integers, congruence relations, structure preserving maps, topics from groups, rings, modules, vector spaces, fields.

Au Qtr. 5 cl. Prereq: H522 with a grade of C or better or written permission of Honors Committee chairperson. The sequence H590-H591-H592 substitutes for the sequence 580-581-582.

**H591 Algebraic Structures II U G 5**

A continuation of H590.

Wi Qtr. 5 cl. Prereq: H590 with a grade of C or better or written permission of Honors Committee chairperson.

**H592 Algebraic Structures III U G 5**

Continuation of H591; further topics in group and field theory and their interrelation; Galois theory.

Sp Qtr. 5 cl. Prereq: H591 with a grade of C or better or written permission of Honors Committee chairperson.

**593 Individual Studies U G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**594 Group Studies U 2-5**

Designed to give groups of advanced undergraduate students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. H594 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**601 Mathematical Principles in Science I U G 3**

Linear algebra in finite dimensions, abstract vector spaces, linear transformations, fundamental subspaces; complex inner product spaces.

Au Qtr. 3 cl. Prereq: 568 or 571 or equiv.

**602 Mathematical Principles in Science II U G 3**

Eigenvalue and eigenvector analysis in finite dimensions, quadratic forms, singular value decomposition, linear analysis in infinite dimensions, Sturm-Liouville theory, Hilbert spaces.

Wi Qtr. 3 cl. Prereq: 601.

**603 Mathematical Principles in Science III**

An introduction to partial differential equations (pdes) that arise in the mathematical and engineering sciences.

Sp Qtr. 3 cl. Prereq: 415 or equiv. and 602.

**603.01 Mathematical Principles in Science III, A U G 3**

General properties and methods of solution of hyperbolic, parabolic, and elliptic pdes that arise in science and engineering.

**603.02 Mathematical Principles in Science III, B U G 3**

Mathematical principles and methods in the physical and engineering sciences including Fourier theory, Green's function theory, study of pdes illustrated mainly by the Helmholtz equation.

**606 Introduction to Numerical Analysis of Partial Differential Equations U G 3**

Classification of partial differential equations; finite difference methods for elliptic, parabolic and hyperbolic PDE's; stability, convergence, error estimates; introduction to finite elements.

Sp Qtr. Prereq: 512 and 572 or equiv with permission of instructor.

**607 Essentials of Numerical Analysis U G 5**

Standard problems of numerical analysis, error analysis, and actual computational algorithms.

Su Qtr. 3 2-hr cl. Prereq: 548 or 652 or permission of the Graduate Studies Committee.

**610 Topics in Mathematics for Teachers**

Special topics in mathematics for teachers at the secondary level.

Su Qtr. Prereq: 1 yr teaching experience or permission of instructor. Designed for in-service teachers.

**610.01 Geometry U G 1-5**

Repeatable to a maximum of 10 or hrs.

**610.02 Algebra U G 1-5**

Repeatable to a maximum of 10 or hrs.

**610.03 Approximation Methods U G 1-5**

Repeatable to a maximum of 10 or hrs.

**610.04 Probability U G 1-5**

Repeatable to a maximum of 10 or hrs.

**610.25 Special Projects U G 1**

Prereq: Enrollment in mathematics MA specialization or written permission of dept. This course is graded S/U.

**616^ Numerical Methods in Actuarial Mathematics U G 4**

Finite differences, difference operators, interpolation, summation, difference equations; applications to actuarial science and finance.

Au Qtr. 2 2-hr cl. Prereq: 254 and 471 or 569; or permission of instructor.

**618 Theory of Interest U G 3**

Mathematical techniques of use in analyzing financial transactions involving interest: measurement of interest, force of interest, annuities-certain, applications to actuarial science.

Wi Qtr. 2 1.5-hr cl. Prereq: 254 or permission of instructor.

**630 Actuarial Mathematics I U G 3**

Problem workshop for applications of economics, finance, and theory of interest to actuarial science.

Au Qtr. 2 1.5-hr cl. Prereq: 531, 618; prereq or concur: Bus-Fin 620.

**631 Actuarial Mathematics II U G 3**

Actuarial models and their application to insurance and other financial risks.

Wi Qtr. 2 1.5-hr cl. Prereq: 630.

**632 Actuarial Mathematics III U G 3**

Continuation of 631; actuarial models and their application to insurance and other financial risks.

Sp Qtr. 2 1.5-hr cl. Prereq: 631 and Stat 521.

**634^ Linear Mathematical Models U G 4**

Linear equations, inequalities, convex sets, matrix algebra, linear programming, duality, applications of linear mathematical models to business, transportation flow, and the social and behavioral sciences.

Au Qtr. 4 cl. Prereq: 117 or 131 or 151 or permission of dept.

**635^ Game Theory U G 3**

Concept of a game, minimax theorem; linear programming.

Wi Qtr. 3 cl. Prereq: 568 or equiv or permission of dept.

**640 Introductory Topology U G 3**

The topology of the line, plane, Euclidean n-space, and metric spaces; emphasis on elementary ideas in topology.

Su Qtr. 3 cl. Prereq: 254 or equiv. Not open to students with credit for 655.

**647 Set Theory U G 3**

Axiomatic set theory, transfinite induction and theory of ordinals, order type of characterizations, cardinal arithmetic and structure, and principles of choice.

Sp Qtr. 3 cl. Prereq: 547 or 580 or equiv with permission of dept.

**648 Mathematical Logic I U G 3**

The syntax and semantics of sentential logic and first order logic; completeness and compactness theorems for first order logic.

Au Qtr. 3 cl.

**649 Mathematical Logic II U G 3**

Continuation of 648; decidability and undecidability of systems and structures for number theory; G<sup>o</sup>del's incompleteness theorems and recursive functions; second order logic.

Wi Qtr. 3 cl. Prereq: 648 or permission of instructor.

**650 Principles of Mathematical Analysis U G 5**

Riemann-Stieltjes integral; uniform convergence and interchange of limit processes, special functions, Fourier series.

Su Qtr. 5 cl. Prereq: 547 or permission of Graduate Advising Committee.

**651 Introduction to Real Analysis I U G 5**

Real numbers, infinite sequences, and series.

Au Qtr. 5 cl.

**652 Introduction to Real Analysis II U G 5**

Continuous functions, differentiable functions and functions of bounded variation; Riemann-Stieltjes integral.

Wi Qtr. 5 cl. Prereq: 651.

**653 Introduction to Real Analysis III U G 5**

Measurable sets and functions, elementary theory of the Lebesgue integral.

Sp Qtr. 5 cl. Prereq: 652.

**654 Complex Variables U G 3**

Complex arithmetic, geometry, conformal mapping, analytic functions, and residues.

Su Qtr. 3 cl. Prereq: Permission of dept. Not open to students with credit for 514 or 552. Recommended primarily for grad students in science and engineering.

**655 Elementary Topology I U G 4**

Continuity, compactness, connectedness in metric and general topological spaces, completeness in metric spaces.

Au Qtr. 4 cl. Prereq: Permission of dept.

**656 Elementary Topology II U G 4**

Continuation of 655; products, quotients, separation axioms, convergence, metrization and compactifications for general topological spaces.

Wi Qtr. 4 cl. Prereq: 655.

**657 Elementary Topology III U G 4**

Continuation of 656; fundamental group and covering spaces.

Sp Qtr. 4 cl. Prereq: 656.

**665^ Modern Mathematical Methods in Relativity Theory I U G 4**

Geometry in Minkowski space-time; physical interpretations; tensors; exterior calculus; manifolds; Lie derivatives; parallel transport; torsion; curvature; Cartan's two structural equations; Einstein Field equations.

Wi Qtr. 4 cl. Prereq: 254 and Physics 133 or equiv with permission of dept.

**669 Introduction to Number Theory U G 5**

Basic concepts of divisibility, congruence, reciprocity, and primitive roots as introduction to algebra with emphasis on techniques of proof.

Su Qtr. 5 cl. Prereq: 254 or equiv.

**670 Algebra I U G 5**

Elementary theory of groups, permutation groups, Polya theory of counting, rings and ideals, polynomials.

Au Qtr. 5 cl. Prereq: Permission of dept.

**671 Algebra II U G 5**

Continuation of 670; vector spaces, linear transformations, canonical forms for matrices, linear programming, orthogonality.

Wi Qtr. 5 cl. Prereq: 670 or permission of dept.

**672 Algebra III U G 5**

Continuation of 671; quadratic forms, finite fields, various applications.

Sp Qtr. 5 cl. Prereq: 671 or permission of dept.

**674 Survey of Combinatorial Mathematics U G 4**

Enumeration, equivalence relations, generating functions, graph theory, optimization, and combinatorial designs.

Su Qtr. 3 cl. Prereq: 569 or equiv with permission of instructor.

**683 Topics in Number Theory and Algebra U G 4**

Joint creative problem activity through daily problem solving sets in number theory.

Su Qtr. 4 cl. Prereq: Permission of instructor.

**693 Individual Studies U G 1-5**

Individual conferences, assigned readings, and reports on minor investigations.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**701<sup>^</sup> Mathematical Methods in Science III U G 5**

Introduction to tensor analysis with applications to geometry; elements of the calculus of variations with applications to physical problems.

Sp Qtr. 3 1.5-hr cl. Prereq: 601 or equiv or permission of dept.

**702<sup>^</sup> Integral Equations and Eigenvalue Problems I U G 3**

Orthogonal functions, linear integral equations of first and second kinds, relations to ordinary differential equations, Volterra's equation, boundary value problems, practical methods of solution.

Au Qtr. 3 cl. Prereq: 602.

**705<sup>^</sup> Special Functions U G 3**

Power series developments, asymptotic expansion, gamma functions, cylindrical functions, spherical harmonics, orthogonal polynomials, hypergeometric functions, theta functions, elliptic functions and integrals, numerical techniques.

Wi Qtr. 3 cl. Prereq: 601 and 602.

**707 Numerical Methods in Scientific Computing I G 3**

Numerical solution of dynamical systems and evolution equations, linear and nonlinear systems, boundary value problems, bifurcation diagrams, form fit of data, interpolation, and approximation theory.

Au Qtr. 3 cl. Prereq: 556 and 572, or equiv; and working knowledge of Fortran, or written permission of instructor.

**708 Numerical Methods in Scientific Computing II G 3**

Continuation of 707; numerical quadrature, integral equations, iterative procedures, multi-grid techniques, computation of eigenvalues and eigenvectors, Hopf bifurcation, and optimization.

Wi Qtr. 3 cl. Prereq: 707.

**709 Numerical Methods in Scientific Computing III G 3**

Numerical solution of ordinary differential equations, consistency, stability and convergence, reaction-diffusion equations, phase diagrams, domains of attraction, strange attractors, and chaos.

Sp Qtr. 3 cl. Prereq: 708.

**712 Applied Functional Analysis I G 3**

Advanced linear algebra; introduction to normed and Hilbert spaces; projections and bounded operators; emphasis on matrix and function space applications.

Au Qtr. 3 cl. Prereq: 653 and 671, or 601 and 602, or permission of instructor. Not open to students with credit for 857, 858, or 859.

**713 Applied Functional Analysis II G 3**

Dual spaces, bilinear functionals, compact operators; Sobolev norms, applications to finite elements and integral equations.

Wi Qtr. 3 cl. Prereq: 712 or permission of instructor. Not open to students with credit for 857, 858, or 859.

**714 Applied Functional Analysis III G 3**

Spectral theory of linear operators, distribution theory, and applications.

Sp Qtr. 3 cl. Prereq: 713 or permission of instructor. Not open to students with credit for 857, 858, or 859.

**715 Differential Equations I U G 3**

Linear and non-linear systems of ordinary differential equations; phase plane analysis; stability, bifurcation, and chaos.

Au Qtr. 3 cl. Prereq: 255, 572, and 652; or permission of instructor. Not open to students with credit for 604.

**716 Differential Equations II U G 3**

Partial differential equations of mathematical physics, classification, characteristics; Sturm-Liouville theory, separation of variables.

Wi Qtr. Prereq: 514, 653, and 715; or permission of instructor. Not open to students with credit for 605.

**717 Differential Equations III U G 3**

Eigenfunction expansions, special functions, Green's functions, Fourier and Laplace transforms.

Sp Qtr. 3 cl. Prereq: 514 and 716, or permission of instructor.

**722 Theory of Probability I G 4**

Measure and integration; random variables; independence; convergence in probability, almost everywhere, and in the mean; conditional probability and expectation.

Prereq: 653. Not open to students with credit for Stat 722. Cross-listed in Statistics.

**723 Theory of Probability II G 4**

Weak convergence; characteristic functions; central limit theorems; random walks; introduction to martingales.

Wi Qtr. 3 cl, 1 lab hr. Prereq: 722. Not open to students with credit for Stat 723. Cross-listed in Statistics.

**724 Theory of Probability III U G 4**

Continuation of 723.

Sp Qtr. 3 cl, 1 lab hr. Prereq: 723.

**727 Scientific Computing Laboratory I G 1**

Designed to teach the computational tools required to write and use numerical codes to study physical systems.

Au Qtr. 1 2-hr cl. Prereq: A good working knowledge of FORTRAN (or another high-level language); concur: 707.

**728 Scientific Computing Laboratory II G 1**

Designed to teach the computational tools required to write and use numerical codes to study physical systems.

Wi Qtr. 1 2-hr cl. Prereq: 727; concur: 708.

**729 Scientific Computing Laboratory III G 1**

Designed to teach the computational tools required to write and use numerical codes to study physical systems.

Sp Qtr. 1 2-hr cl. Prereq: 728; concur: 709.

**735 Seminar in Teaching College Mathematics for International Graduate Students G 3**

Preparation of international graduate students for the teaching of college level mathematics courses.

Su Qtr. 3 2-hr cl. Prereq: Permission of Graduate Advising Committee. This course is graded S/U.

**736 Seminar in Teaching College Mathematics for Domestic Graduate Students G 3**

Preparation for teaching lower-division mathematics courses.

Su Qtr. 3 2-hr cl. Prereq: Permission of Graduate Advising Committee. This course is graded S/U.

**745 Advanced Mathematical Logic I U G 3**

Basic proof theory and model theory; completeness, interpolation and definability theorems, elimination of quantifiers, compactness, Lowenheim-Skolem Theorems, elementary extensions, and categoricity.

Au Qtr. 3 cl. Prereq: 649 or permission of instructor.

**746 Advanced Mathematical Logic II U G 3**

Incompleteness and undecidability; basic recursion theory; Turing machines, Church's thesis, recursive and recursively enumerable sets, Turing degrees, and the arithmetical hierarchy.

Wi Qtr. 3 cl. Prereq: 745 or permission of instructor.

**747 Advanced Mathematical Logic III U G 3**

Basic axiomatic set theory; Zermelo-Frankel set theory, the cumulative hierarchy, ordinals and cardinals, constructibility, and forcing.

Sp Qtr. 3 cl. Prereq: 746 or permission of instructor.

**750 Real Analysis I U G 5**

Relative extremes in partial orders; additive and countable additive set functions; extensions of set functions; integration, differentiation, applications.

Au Qtr. 5 cl. Prereq: 653.

**751 Real Analysis II U G 5**

Continuation of 750.

Wi Qtr. 5 cl. Prereq: 750.

**752 Real Analysis III U G 5**

Continuation of 751.

Sp Qtr. 5 cl. Prereq: 751.

**753\* Introduction to Complex Analysis I U G 5**

Families of holomorphic and meromorphic functions, geometrical methods of the theory of functions, conformal transformations; including the Cauchy integral theorem, Runge's theorem, Riemann mapping theorem.

Au Qtr. 5 cl. Prereq: 653.

**754 Introduction to Complex Analysis II U G 5**

Analytic continuation, general analytic functions, algebraic, entire, elliptic, the gamma and zeta function, Dirichlet's series, Picard's theorems, Mittag-Leffler's theorem, Stirling's formula.

Wi Qtr. 5 cl. Prereq: 753.

**767\* Introduction to the Theory of Approximation I U G 4**

Approximation by polynomials and trigonometric polynomials, Chebeshev's theory of best approximation and its generalizations; interpolation processes and mechanical quadrature; orthogonal polynomials and elements of harmonic analysis.

Au Qtr. 4 cl. Prereq: 653 or equiv with permission of dept.

**768\* Introduction to the Theory of Approximation II U G 4**

A continuation of 767.

Wi Qtr. 4 cl. Prereq: 767 or equiv with permission of dept.

**770 Abstract Algebra I U G 5**

Permutation groups, solvable groups, composition series, polynomial rings, unique factorization domains, canonical forms, bilinear forms, free modules, tensor products, Galois theory, algebraic closure, transcendental extensions.

Au Qtr. 5 cl. Prereq: 672 or equiv with permission of instructor.

**771 Abstract Algebra II U G 5**

A continuation of 770.

Wi Qtr. 5 cl. Prereq: 770 or equiv with permission of dept.

**772 Abstract Algebra III U G 5**

A continuation of 771.

Sp Qtr. 5 cl. Prereq: 771 or equiv with permission of dept.

**775 Combinatorics and Graph Theory I U G 5**

Transversal theory, network flows, matroids, linear programming, Ramsey theory.

Au Qtr. Prereq: 672.

**776 Combinatorics and Graph Theory II U G 5**

Combinatorial designs and geometries, difference sets, orthogonal Latin squares, coding theory, enumeration theory including M\*bius inversion, Polya theory, and generating functions.

Wi Qtr. Prereq: 775.

**777 Combinatorics and Graph Theory III U G 5**

Planar graphs and embeddings in surfaces, graph connectivity, algebraic graph theory.

Sp Qtr. Prereq: 776.

**780 Number Theory I U G 3**

Algebraic number theory.

Au Qtr. 3 cl. Prereq: 772.

**781 Number Theory II U G 3**

Diophantine equations.

Wi Qtr. 3 cl. Prereq: 780.

**782 Number Theory III U G 3**

Analytic number theory.

Sp Qtr. 3 cl. Prereq: 781.

**H783 Honors Research U 3-5**

A program of reading and research for each student with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. arr cl. Prereq: 4th yr standing with a cumulative pt-hr ratio of 3.50 in math; permission of instructor under whose supervision the work is to be completed and of the ASC Honors Committee. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**787 Graduate Problem Seminars**

Topics helpful in problem solving in fundamental areas of mathematics; practice with problems in a specific area of mathematics.

Su Qtr. 3 cl. Prereq: Permission of Graduate Advising Committee.

**787.01 Problems in Abstract Algebra U G 3**

Repeatable to a maximum of 9 cr hrs.

**787.03 Problems in Real Analysis U G 3**

Repeatable to a maximum of 9 cr hrs.

**804\* Applied Complex Variables and Asymptotics I G 3**

Methods of complex variables.

Au Qtr. 3 cl. Prereq: 653, 654, and 717; or permission of instructor.

**805\* Applied Complex Variables and Asymptotics II G 3**

Asymptotic methods and their application to ordinary differential equations.

Wi Qtr. 3 cl. Prereq: 804.

**806\* Applied Complex Variables and Asymptotics III G 3**

Asymptotic and complex variable methods applied to linear and nonlinear partial differential equations.

Sp Qtr. 3 cl. Prereq: 805.

**807\* Numerical Solution of Partial Differential Equations I G 3**

Finite difference methods for parabolic and hyperbolic partial differential equations.

Au Qtr. 3 cl. Prereq: 602 or 717, 709, and Fortran experience; or permission of instructor.

**808\* Numerical Solution of Partial Differential Equations II G 3**

Continuation of 807.

Wi Qtr. 3 cl. Prereq: 807.

**809 Numerical Solution of Partial Differential Equations III G 3**

Special topics in the numerical solution of partial differential equations.

Sp Qtr. 3 cl. Prereq: 808.

**820\* Ordinary Differential Equations I G 3**

Modern theory of ordinary differential equations; stability, asymptotic analysis, Lyapunov exponents, stable manifolds, perturbation methods, and bifurcation theory.

Au Qtr. 3 cl. Prereq: 715 or permission of instructor. Not open to students with credit for 760.

**821\* Ordinary Differential Equations II G 3**

Continuation of 820; differential equations on manifolds, structural stability, integrable and nonintegrable systems; chaos and strange attractors; applications.

Wi Qtr. 3 cl. Prereq: 820. Not open to students with credit for 761.

**822\* Ordinary Differential Equations III G 3**

Continuation of 821.

Sp Qtr. 3 cl. Prereq: 761 or 821 or permission of instructor.

**835\* Partial Differential Equations I G 3**

First order PDE's, theory of characteristics, second order PDE's, classifications, standard methods of solution; nonlinear equations.

Wi Qtr. 3 cl. Prereq: 717 or permission of instructor. Not open to students with credit for 763.

**836\* Partial Differential Equations II G 3**

Continuation of 835.

Sp Qtr. 3 cl. Prereq: 835 or permission of instructor. Not open to students with credit for 764.

**840\* Algebraic Geometry I G 3**

Varieties over algebraically closed fields.

Au Qtr. 2 72-min cl. Prereq: 772.

**841\* Algebraic Geometry II G 3**

Schemes, sheaves, and cohomology.

Wi Qtr. 2 72-min cl. Prereq: 840.

**842\* Algebraic Geometry III G 3**

Curves and surfaces.

Sp Qtr. 2 72-min cl. Prereq: 841.

**846 Topics in Discrete Mathematics G 2-5**

Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**851 Differential Geometry I G 3**

Curves, surfaces, fundamental forms, tensors, and connections.

Wi Qtr. 3 cl. Prereq: 655, 751, and 771.

**852 Differential Geometry II G 3**

Continuation of 851.

Sp Qtr. 3 cl. Prereq: 851.

**854 Lie Groups I G 3**

Integration on manifolds, Lie groups, classical groups, homogeneous spaces.

Wi Qtr. 3 cl. Prereq: 651, 751, and 771.

**855 Lie Groups II G 3**

Continuation of 854.

Sp Qtr. 3 cl. Prereq: 854.

- 857\* Introduction to Functional Analysis I G 3**  
Linear topological spaces, normed spaces, Hilbert spaces, convex sets, integration of vector-valued functions.  
Au Qtr. 3 cl. Prereq: 552 and 751.
- 860\* Algebraic Topology I G 3**  
Singular homology theory.  
Au Qtr. 3 cl. Prereq: 657.
- 861\* Algebraic Topology II G 3**  
Continuation of 860; general cohomology theories.  
Wi Qtr. 3 cl. Prereq: 860.
- 862\* Algebraic Topology III G 3**  
Continuation of 860 and 861; fibrations and homotopy theory.  
Sp Qtr. 3 cl. Prereq: 861.
- 863\* Potential Theory I G 3**  
Newtonian potentials, boundary value problems; logarithmic potential, elliptic partial differential equations.  
Sp Qtr. Prereq: 552 and permission of dept.
- 865 Topics in Applied Mathematics G 2-5**  
Su, Au Qtrs. 2-5 cl. Prereq: Written permission of dept. Repeatable to a maximum of 20 cr hrs.
- 866\*\* Differential Topology I G 3**  
Differential manifolds and differential maps, tangent bundles, vector bundles and transversality.  
Au Qtr. 3 cl. Prereq: 657 or permission of instructor.
- 867\*\* Differential Topology II G 3**  
Singular homology and cohomology, Poincaré duality, intersection numbers, cobordism theory.  
Wi Qtr. 3 cl. Prereq: 866 or permission of instructor.
- 868\*\* Differential Topology III G 3**  
Characteristic classes and the theory of fibre bundles.  
Sp Qtr. 3 cl. Prereq: 867 or permission of instructor.
- 870 Topics in Graph Theory G 2-5**  
Topics of current research interest.  
Au, Wi, Sp Qtrs. Prereq: 777 and permission of dept. Repeatable to a maximum of 15 cr hrs.
- 872 Group Theory I G 4**  
Properties of groups, extensions, transfer, generators and defining relations, representation theory, permutation groups.  
Au Qtr. 4 cl. Prereq: 672 or 772.
- 873 Group Theory II G 4**  
Continuation of 872.  
Wi Qtr. 4 cl. Prereq: 872.
- 874 Group Theory III G 4**  
Continuation of 873.  
Sp Qtr. 4 cl. Prereq: 873.
- 875 Combinatorics Seminar G 2-5**  
Recent research articles in combinatorics are read and presented by the students.  
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs.
- 893 Individual Studies G 1-5**  
Individual assigned readings and reports on research investigations.  
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
- 894 Group Studies G 1-5**  
When need is sufficient, the department will offer under this number a course on some phase of mathematics not covered in its regular offerings.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 30 cr hrs.
- 931 Ergodic Theory I G 3**  
Measurable transformations, mixing and ergodicity, existence of invariant measures, contraction operations on function spaces, ergodic theorems.  
Au Qtr. 3 cl. Prereq: 751.
- 932 Ergodic Theory II G 3**  
Continuation of 931.  
Wi Qtr. 3 cl. Prereq: 931.
- 939 Topics in Probability Theory G 2-5**  
Various advanced topics in probability theory.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
- 949 Topics in Logic G 2-5**  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
- 950 Topics in Real Analysis G 2-5**  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
- 951 Topics in Complex Analysis G 2-5**  
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: 754. Repeatable to a maximum of 20 cr hrs.
- 953 Topics in Topology G 2-5**  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 45 cr hrs.
- 957 Topics in Differential Geometry G 2-5**  
Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
- 961 Topics in Functional Analysis G 2-5**  
Topics to be chosen from current research papers.  
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
- 970 Topics in Representation Theory G 2-5**  
Topics in the representation theory of various algebraic structures.  
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
- 974 Topics in Homological Algebra G 2-5**  
Topics selected from current research articles.  
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: 973 or permission of dept. Repeatable to a maximum of 20 cr hrs.
- 975 Topics in Geometry G 2-5**  
Topics to be chosen from current research papers.  
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
- 976 Topics in Ring Theory G 2-5**  
Topics selected from current research papers.  
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: 772. Repeatable to a maximum of 20 cr hrs.
- 981 Topics in the Theory of Groups G 2-5**  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
- 982 Topics in Algebra G 2-5**  
Topics selected from current research papers.  
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
- 983 Topics in Number Theory G 2-5**  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
- 984 Seminar on Actuarial Science G 2-5**  
Current topics in actuarial science.  
Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.
- 985 Seminar in Group Theory G 2-5**  
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.
- 986 Seminar on Algebra G 2-5**  
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.
- 988 Seminar on Number Theory G 2-5**  
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.
- 990 Seminar on Geometry G 2-5**  
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.



**991 Seminar in Probability Theory G 2-5**

Topics selected from current research papers.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**992 Seminar in Applied Mathematics G 2-5**

Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**995 Seminar in Ergodic Theory G 2-5**

Topics selected from current research papers.

Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**996 Seminar in Analysis G 2-5**

Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**997 Seminar in Topology G 2-5**

Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**999 Research G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Mechanical Engineering

2075 Robinson Laboratory, 206 West 18th Avenue, 292-2289

**H210 Honors Statics U 4**

Vector concepts of static equilibrium for isolated and connected body force systems. Analysis techniques of trusses, frames and machines. Construction of shear and moment diagrams.

Sp Qtr. 4 cl. Prereq: Physics 131G; prereq or concur: En Graph H167 and Math 254 or equiv. Not open to students with credit for 410, or Eng Mech H210, 220, 293, or 400. This course is part of the Freshman Engineering Honors Program.

**250 Numerical Methods in Mechanical Engineering U 3**

Computing methods for nonlinear equations, interpolation, and ordinary differential equations applied to engineering problems.

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: Enrollment as Mech Eng major or written permission of Mech Eng dept.

**293 Individual Studies in Introductory Solid Mechanics U 1**

Supplemental course for transfer students with credit for statics; topics include the response of deformable bodies subjected to axial, flexural, and torsional loads.

Au, Wi, Sp Qtrs. Arr. Prereq: Credit for 4 hrs of statics. Not open to students with credit for 400 or 410 or 420, or Eng Mech 220 or 293 or 400 or 440. Open only to students seeking transfer credit for 400. This course is graded S/U.

**294 Group Studies in Mechanical Engineering U 1-6**

Special topics in mechanical engineering; the particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable.

**400 Introduction to Solid Mechanics U 5**

Vector concepts of static equilibrium for isolated and connected body systems; introduction to response of deformable bodies subjected to axial, flexural, and torsional loads.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Physics 131, En Graph 167 or equiv, Math 254 (or concur), and minimum CPHR of 2.00 or acceptance in an ENG major, or a CPHR equal to or greater than that of intended major. Not open to students with credit for H210 or 410, or Eng Mech H210 or 220 or 400.

**410 Statics U 4**

Vector concepts of static equilibrium for isolated and connected bodies, centroids, inertia, truss, frame and machine analysis, shear force and bending moment diagrams, and friction.

Au, Wi, Sp Qtrs. 3 64-min cl. Prereq: En Graph 167 or Cptr/Inf 201 or equiv, and Physics 131 and Math 254 (prereq or concur). CPHR 2.00 or above recommended. Not open to students with credit for H210, 400; Eng Mech H210, 220, 400; or Engineer 194.20.

**420 Introduction Strength of Materials U 4**

Stress and strain analysis of structural components subjected to unidirectional and combined loads; pressure vessels; beam deflections, Mohr's Circle, and columns.

Au, Wi, Sp Qtrs. 3 64-min cl. Prereq: H210 or 410, or Eng Mech H210, or permission of instructor. Not open to students with credit for 440 or Eng Mech 440.

**430 Dynamics U 4**

Dynamics of particles and rigid bodies; linear and angular motion; work and energy; and single degree of freedom vibration analysis.

Au, Wi, Sp Qtrs. 3 cl. Prereq: H210 or 400 or 410, or Eng Mech H210 or 220 or 400. Not open to students with credit for Eng Mech 430.

**440 Strength of Materials U 3**

Stress and strain analysis of structural components subjected to unidirectional and combined loadings; pressure vessels, beam deflections, columns.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 400, or Eng Mech 220 or 400. Not open to students with credit for 420 or Eng Mech 440.

**481 System Dynamics and Vibrations U 3**

Modeling of mechanical and electrical systems; first and second order systems; and analytical, computer, and experimental solution methods.

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 250 and Elec Eng 300.

**482 System Dynamics and Electromechanics U 4**

Dynamics of general linear systems, thermofluid system dynamics, and electromechanics with emphasis on applications in mechanical engineering.

Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. Prereq: 481 and 503; and prereq or concur: 504.

**489 Professional Practice in Industry U 2**

Actual employment in a co-op program job in industry and the preparation of a comprehensive report based on a pre-assigned outline.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to Co-op program in Mech Eng. Repeatable to a maximum of 8 cr hrs. This course may only be counted as a free elective. This course is graded S/U.

**494 Group Studies in Mechanical Engineering U 1-4**

Short term project organization, design, construction, marketing and budgeting.

Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs.

**500 Engineering Thermal Sciences U G 4**

Introduction to thermodynamics, fluid mechanics and heat transfer with engineering applications.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Math 255 or 415, Physics 132, Chem 121 or permission of dept. Not open to students majoring in Mech Eng. Open to students enrolled in College of Engineering only.

**501 Thermodynamics I U G 4**

A study of basic engineering thermodynamics.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 430 or Eng Mech 430, Chem 121, Math 255 or 415 and enrollment as an engineering major.

**502 Thermodynamics II U G 3**

Continuation of 501.

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 250 and 501.

**503 Fluid Dynamics I U G 3**

A study of the basic concepts, fundamental equations, and applications of fluid mechanics to engineering problems.

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 250 and 501.

**504 Fluid Dynamics II U G 3**

Continuation of 503.

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 502 and 503.

**505 Introduction to Nuclear Science and Engineering U G 3**

Discussion of nuclear energy and nuclear radiation; sources, methods of utilization, and projections for future engineering uses.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: Math 255 or 415 and Physics 133, or permission of instructor. Not open to students with credit for Nuclr En 505. Cross-listed in Nuclear Engineering.

**510 Heat Transfer U G 3**

A study of the fundamentals of conduction, convection, and thermal radiation energy transfer with engineering applications.

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 501, and 504 or Civil En 413.

**512 Fluid Mechanics and Heat Transfer Laboratory U G 2**

Experiments in fluid mechanics and heat transfer.

Au, Wi, Sp Qtrs. 1 4-hr lab. Prereq: 510 or permission of department. This course represents the labs formerly included in Mech Eng 504 and 510.

**553 Kinematics and Dynamics of Machinery U G 4**

Motion and force analysis in mechanisms such as plane linkages and cams; introduction to the synthesis of plane linkages and simple cam systems.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 430 or Eng Mech 430 or Physics 263, Mech Eng 250, 561, and enrollment in an engineering major or permission of the Mech Eng dept.

**561 Failure Modes, Stress Analysis, and Failure Prevention Principles U G 5**

A study of the application of the general principles and empiricisms of mechanics of solids to the creative design of mechanical equipment.  
 Au, Wi, Sp Qtrs. 2 2-hr cl, 1 2-hr lab. Prereq: 250, 420, MatSc&En 205 and Ind Eng 311 or permission of the dept.

**562 Design of Selected Machine Elements I U G 3**

Continuation of 561.

Au, Wi, Sp Qtrs. 2 1.5-hr cl Prereq: 561.

**563 Design of Selected Machine Elements II U G 3**

Continuation of 562.

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 562 and 553.

**564 Senior Design Group Project U G 4**

Methodology of intermediate design and practice in the design of a specific system which may utilize principles of any engineering discipline; written assignments and oral presentation.

Au, Wi, Sp Qtrs. 3 2-hr lab. Prereq: 510; a second writing course and prereq or concur: 563. Offered in cooperation with Nuclear Engineering. GEC course.

**565 Mechanical Engineering Design**

Three courses in an integrated sequence constituting a capstone mechanical design experience including technical communications.

1 cl, 2 2-hr lab. Not open to students with credit for 564, 581, 694X, 694Y or 694Z. These courses will integrate design and engineering practice with a focus on real mechanical engineering design problems provided by industrial sponsors.

**565.01 Mechanical Engineering Design U 3**

Au Qtr. Prereq: 562 and 2nd writing course or permission of instructor.

**565.02 Mechanical Engineering Design U 3**

Wi Qtr. Prereq: 565.01.

**565.03 Mechanical Engineering Design U 3**

Sp Qtr. Prereq: 565.02.

**570 Mechanical Engineering Measurements U G 5**

A theoretical and experimental study of the principles of operation and performance characteristics of measuring instruments used in mechanical engineering; written assignments and oral presentation.

Au, Wi, Sp Qtrs. 2 cl, 1 4-hr lab. Prereq: 482, Elec Eng 320; a second writing course and prereq or concur: 510. GEC course.

**571 Principles of Automatic Control U G 4**

A theoretical and experimental study of the principles of operation of feedback control systems, including servomechanisms and process control.

Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. Prereq: Agri Eng 525 or prereq or concur 570.

**578 Senior Program Review U 0**

An interactive assessment of graduating seniors' overall achievements in Mechanical Engineering and their assessment of the program.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrolled in quarter of graduation. This course is graded S/U.

**580 Special Topics in Vehicle Development**

Topics of special interest in vehicle development. Studies include analysis, design, fabrication and testing of vehicles. Topics are announced in quarter prior to quarter offered.

Su, Au, Wi, Sp Qtrs. Prereq: Jr standing in Engineering or written permission of instructor. Up to 4 cr hrs applicable as BSME technical electives.

**580.01 High Performance Vehicle Development U 2**

Repeatable to a maximum of 8 cr hrs.

**580.02 All Terrain Vehicle Development U 2**

Repeatable to a maximum of 8 cr hrs.

**580.03 Flight Vehicle Development U 2**

Repeatable to a maximum of 8 cr hrs.

**580.04 Analysis, Design, Fabrication and Testing of Non-Conventional Vehicles U 2**

Repeatable to a maximum of 8 cr hrs.

**581 Mechanical Engineering Laboratory U G 4**

The study and application of methods of experimental analysis.

Au, Wi, Sp Qtrs. 2 2-hr lab and 5 hrs lab planning and report writing. Prereq: 570. Offered in cooperation with Nuclear Engineering. GEC course.

**593 Individual Studies in Mechanical Engineering U G 1-5**

Provides the opportunity to pursue special studies in mechanical engineering not otherwise covered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**612 Principles of Heat Exchangers U G 3**

A study of principles of heat and mass transfer as applied to the design of heat exchangers.

Au Qtr. 2 1.5-hr cl. Prereq: 510 or grad standing in Mech Eng or permission of instructor.

**620 Advanced Strength of Materials U G 4**

Mohr's Circle for strain; failure theories; curved beams; bending of non-symmetrical sections; non-circular torsion; beams on elastic foundations; and load-deflection relations by energy methods.

Au Qtr. 4 cl. Prereq: 420 or 440 or Eng Mech 440, and Math 255 or 415. Not open to students with credit for Eng Mech 622.

**621 Introduction to Parametric Design U G 3**

Design of components, assemblies, molds and dies using parametric and feature-based design principles.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 561 or Ind Eng 656 or Weld Eng 600 or grad standing in Ind Eng, Mech Eng or manufacturing systems and engineering program. Not open to students with credit for Ind Eng 621. Cross-listed in Industrial and Systems Engineering.

**622 Tool Engineering U G 4**

Design of tools; jigs and fixtures. Basic elements of fixture design, such as form, locating points, clamping devices, and the use of standardized parts.

Au Qtr. 2 1.5-hr cl, 1 3-hr lab. Prereq: Ind Eng 311; prereq or concur: Ind Eng/Mech Eng 621. Not open to students with credit for Ind Eng 622 or 631. Cross-listed in Industrial and Systems Engineering.

**623 Machine Tool Control and Programming U G 4**

Provides an introduction to numerically controlled machine tools including principles of operation, programming systems, computer-assisted programming, performance characteristics, and applications.

Sp Qtr. 2 1.5-hr cl, 2 3-hr labs. Prereq: Mech Eng/Ind Eng 621 and Mech Eng/Ind Eng 683 or permission of instructor. Not open to students with credit for Ind Eng 605 or Ind Eng 623. Cross-listed in Industrial and Systems Engineering.

**625\* Central-station Fossil Power Generation U G 3**

An analytical and descriptive study of the vapor power cycles and associated energy transport processes used in the generation of electrical power from fossil fuels.

Sp Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 502 and 510 or permission of instructor. Offered even numbered years.

**627 Introduction to Turbomachinery U G 4**

An introduction to the design and principles of power-producing, absorbing, and transmitting turbomachinery.

Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 503 and 504. Not open to students with credit for 527.

**628 Experimental Methods in Mechanics U G 3**

Static and dynamic strain analysis by electrical gauges; grid techniques; brittle coatings; analogies; reflective photoelasticity in normal and oblique incidence; motion measurements.

Sp Qtr. 2 cl, 2 lab hrs. Prereq: 420 or 440 or Eng Mech 440 or equiv. Not open to students with credit for Eng Mech 627.

**630 Energy Conversion in Internal Combustion Engines U G 3**

A study of combustion chambers, valve mechanisms, and the dynamic balance of internal combustion engines.

Au Qtr. 2 1.5-hr cl. Prereq: 502 or grad standing in mech eng or permission of instructor.

**633^ Vibrations Laboratory U G 3**

Experiments in vibrations of discrete systems, beams, plates, and shells; stress wave propagation.

Sp Qtr. 2 cl, 2 hrs labs. Prereq: 430 or Eng Mech 430, and Math 255 or 415 or equiv. Not open to students with credit for Eng Mech 633.

**634 Gas Turbine Power Plants U G 3**

A study of the principles, performance, and design of gas turbine power plants.

Sp Qtr. 2 1.5-hr cl. Prereq: 510 or grad standing in Mech Eng or permission of instructor. 601 recommended.

**638^ Introduction to Ultrasonics U G 4**

Ultrasonic waves in solids and fluids; ultrasonic generators and systems; physical ultrasonics; applications of ultrasonics.

Au Qtr. 4 cl. Prereq: 420 or 440 or Eng Mech 440; Math 255 or 415. Not open to students with credit for Eng Mech 634, Weld Eng 634 or 638. Cross-listed in Welding Engineering.

**639 Applied Finite Element Method U G 4**

Overview of finite element method, description of finite element software, modeling requirements and techniques, analysis using general purpose software, case studies.

Au Qtr. 2-hr cl, 2-hr recitation. Prereq: 420 or 440 or Eng Mech 440 or equiv. Not open to students with credit for Eng Mech 639.

**640 Principles of Environmental Control U G 3**

A study of the human in the indoor environment. The environment that provides health and comfort is defined. Methods of evaluating the environment and procedures to change the environment are presented.

Au Qtr. 2 1.5-hr cl. Prereq: 500; or 501 and prereq or concur 510; or grad standing in mech eng.

**641 Heating, Ventilating, and Air Conditioning U G 3**

A study of design techniques, practices, components, and systems for typical environmental control applications such as human comfort.

Wi Qtr. 2 1.5-hr cl. Prereq: 500; or 501 and prereq or concur 510; or grad standing in mech eng.

**642 Introduction to Absorption Refrigeration U G 3**

Introductory course in the fundamentals of absorption refrigeration. Topics include properties of absorbing mixtures, lithium bromide systems, ammonia-water systems; advanced systems will be covered briefly.

Sp Qtr. 2.5-hr cl. Prereq: 510 or permission of instructor. Open only to students with sr or grad standing.

**644 Engineering Fracture Mechanics U G 3**

Fracture and fatigue; stress intensity factors; the stability of cracks; compliance and energy rate analysis; plane stress, plane strain; crack propagation and arrest.

Wi Qtr. 3 cl. Prereq: 420 or 440 or Eng Mech 440 and Math 512 or equiv. Not open to students with credit for Eng Mech 644.

**650 Vibration of Mechanical Systems U G 3**

Techniques for the analysis of vibratory mechanical systems - free and forced response, damping, multiple degree of freedom systems, vibration design and experimental vibration methods.

Wi Qtr. 2 1.5-hr cl. Prereq: 482 or permission of instructor.

**654 Land Vehicle Dynamics U G 3**

Study of the principles and design methodology of automotive vehicles; design and analysis of suspension and braking systems.

Sp Qtr. 2 1.5-hr cl. Prereq: 482 and 562 or grad standing in mech eng or permission of instructor.

**662 Introduction to Mechanics of Composite Structures U G 4**

An introduction to the macromechanical analysis of anisotropic composite structures including governing constituent equations, strength and stiffness advantages and failure envelopes.

Au Qtr. 4 cl. Prereq: 420 or 440 or Eng Mech 440 or equiv, or permission of instructor. Not open to students with credit for Civil En 662 or Eng Mech 662. Cross-listed in Civil Engineering.

**664 Mechanical Engineering Computer-Aided Design I U G 4**

Methodology and practice in computer-aided design of components and systems utilizing principles of several mechanical engineering disciplines.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 510 and 561; Math 415; and En Graph 167 or written permission of course supervisor.

**666 Acoustic Problems in Engineering U G 3**

A study of the fundamentals of acoustics and noise control including design criteria based on hearing damage and other human responses to sound.

Wi Qtr. 2 1.5 - hr cl. Prereq: 3rd yr or grad standing in science or ENG or permission of instructor.

**672 Control Systems Design U G 3**

A study of the theoretical procedures involved in the analysis and design of feedback control systems including servomechanisms and process control.

Sp Qtr. 2 1.5-hr cl. Prereq: 571 or grad standing in Mech Eng or permission of instructor.

**674 Introduction to Mechatronics U G 3**

Introduction to multi-domain systems. Mechanical, thermal, fluid, electrical, electronic, electro-mechanical system dynamics. Emphasis on modeling and simulation of hybrid systems using modern computer-aided tools.

Au Qtr. 2 1.5-hr lec. Prereq: 482 or Elec Eng 320 or equiv, or permission of instructor.

**675\* Design of Fluid Power Systems U G 3**

Study of the principles and design methodology of fluid power transmission and control components and systems; emphasis on dynamic analysis with laboratory and computer simulation demonstrations.

Au Qtr. 2 1.5-hr cl. Prereq: 482 and 504; prereq or concur 562, or grad standing in mech eng, or permission of instructor. Offered odd numbered years.

**H680 Digital Data Acquisition and Signal Processing U G 3**

Methodology and practice of computer-aided experimentation and signal processing techniques; frequency analysis, diagnostics, system identification, and random data processing.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq or concur: 481, jr standing in dept or equiv, 3.40 cumulative pt-hr ratio, and permission of dept. Not available for audit. Open to Honors and combined BS/MS students only.

**682 Design for Manufacturing U G 4**

Principles of CAD/CAM and design for automatic manufacturing and assembly; integration of design and manufacturing; simulation of manufacturing processes.

Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. Prereq: 561 or Ind Eng 523 or grad standing. Not open to students with credit for 582 or Ind Eng 682. Cross-listed in Industrial and Systems Engineering.

**683 CAD/CAM Laboratory for Rapid Design Prototyping U G 3**

Rapid design prototyping using engineering workstations, CAD/CAM software, and table-top CNC milling machines, lathes, and injection-molding machine.

Au, Wi, Sp Qtrs. 1 2-hr cl, 1 2-hr lab Prereq: 561 or Ind Eng 656; or grad standing in mech eng, ind eng or in the manufacturing systems and engineering program. Not open to students with credit for 582 or Ind Eng 683. Cross-listed in Industrial and Systems Engineering.

**687 Introduction to Design in Biomedical Engineering U G 3**

Introduction of engineering students to design problems in bio-medical engineering; analysis in bio-mechanics, bio-fluid mechanics, diffusion, and elementary physiology.

Sp Qtr. 2 1.5-hr cl. Prereq: 561 or grad standing in engineering or permission of instructor.

**693 Individual Studies in Mechanical Engineering U G 2-10**

Designed to give the advanced student opportunity to pursue special studies not otherwise offered; work undertaken will be selected from automotive and internal combustion machinery, combustion and fuels, heat transfer, heating, ventilating, air conditioning, industrial hydraulics, machine design, refrigeration, steam power plants, and thermodynamics.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**694 Group Studies in Mechanical Engineering U G 1-6**

Special topics in mechanical engineering. The particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701 Gas Dynamics U G 3**

An analytical study of one and two dimensional steady flows and one dimensional unsteady flow.

Au Qtr. 2 1.5-hr cl. Prereq: 504 and Math 415 or grad standing in mech eng or permission of instructor.

**702 Advanced Engineering Thermodynamics U G 3**

A study of the fundamentals of thermodynamics from the classical viewpoint with emphasis on the use of the first and second laws for the analysis of thermal systems.

Sp Qtr. 2 1.5-hr cl. Prereq: 502 and Math 415 or written permission of course supervisor.

**705 Fundamental Concepts in Fluid Mechanics G 3**

In-depth derivation of equations and principles governing fluid flow with an emphasis on formulation of problems.

Au Qtr. 2 1.5-hr cl. Prereq: Grad standing in Mech Eng or permission of instructor.

**707 Numerical Methods in Particle Diffusion, Heat Transfer, and Radiation Transport U G 3**

Computer solution of neutron diffusion, heat conduction, and radiation transport based on finite difference methods using marching, iterative, and direct-solution schemes.

Wi Qtr. 2 1.5-hr cl. Prereq: 510 or Math 512 or Nuclr En 660, Cp/r/Inf 541, and En Graph 167. Not open to students with credit for Nuclr En 707 or 767. Cross-listed in Nuclear Engineering.

**710 Fundamental Concepts In Heat and Mass Transfer G 3**

In-depth derivation of equations and principles governing heat and mass transfer with an emphasis on formulation of problems.

Au Qtr. 2 1.5-hr cl. Prereq: Grad standing in mech eng or permission of instructor.

**711 Advanced Engineering Dynamics U G 4**

Three-dimensional kinematics and kinetics of particles and rigid bodies; Lagrangian mechanics; Hamiltonian methods; engineering applications.

Wi Qtr. 4 cl. Prereq: 430 or Eng Mech 430 and Math 255, or equivs. Not open to students with credit for Eng Mech 711.

**712\*\* Energy Principles in Mechanics U G 3**

Theoretical development of energy principles in mechanics; strain energy and complementary energy with related minimal principles; applications to problems in elasticity, dynamics, and vibrations.

Au Qtr. 3 cl. Prereq: 420 or 440 or Eng Mech 400 and Math 255, or equivs. Not open to students with credit for Eng Mech 712. Offered even numbered years.

**716 Probabilistic Reliability and Safety Analysis U G 3**

Modeling techniques for probabilistic reliability and safety analysis of large process systems such as found in nuclear, chemical and mechanical systems.

Sp Qtr. 2 1.5-hr cl. Prereq: Grad standing in Nuclr or Mech Eng or permission of instructor. Not open to students with credit for Nuclr En 716. Cross-listed in Nuclear Engineering.

**726 Introduction to Combustion U G 3**

Introduction to thermodynamics and kinetics of combustion and to the role of diffusion in combustion systems; applications to evaporation of fuel droplets, catalytic conversion, and coal combustion.

Wi Qtr. 2 1.5-hr cl. Prereq: 504; prereq or concur: 510.

**730\*\* Internal Combustion Engine Modeling G 3**

Comprehensive coverage of spark-ignited internal combustion engines modeling (fluid dynamics, thermodynamics and combustion).

Sp Qtr. 2 1.5-hr cl. Prereq: Mech Eng 630 or permission of instructor. Specifically targeted to grad students and selected undergrads working in the area of internal combustion engine development, modeling and control. Offered odd numbered years.

**731 Vibrations of Discrete Systems U G 4**

Free and forced vibrations of mechanical systems having lumped mass and elasticity; multiple degrees of freedom; dissipative systems; random vibrations; engineering applications.

Au Qtr. 4 cl. Prereq: 430 or Eng Mech 430 and Math 255, or equivs. Not open to students with credit for Eng Mech 731.

**732\*\* Nonlinear Vibrations U G 3**

Vibrations of damped and undamped systems with nonlinear restoring forces; self-sustained oscillations; application of Hill's equation of stability of non-linear oscillations.

Sp Qtr. 3 cl. Prereq: 731 or Eng Mech 731 and Math 255 or equiv. Not open to students with credit for Eng Mech 732. Offered even numbered years.

**734 Vibrations of Continuous Systems U G 3**

Equations of motion for strings, membranes, prismatical bars, and plates for various boundary conditions; approximate methods for complicated shapes; wave propagation in elastic media.

Sp Qtr. 3 cl. Prereq: 430 or Eng Mech 430 and Math 255, or equivs. Not open to students with credit for Eng Mech 734.

**736 Nuclear Power Plants U G 3**

A study of thermal and mechanical design aspects and economics of nuclear power plants and processes. The thermodynamics of operating nuclear power plants (BWR's and PWR's) are emphasized.

Wi Qtr. 2 1.5-hr cl. Prereq: Nuclr En 505 and 501 or 500 with permission of instructor. Not open to students with credit for 636 or Nuclr En 636 or 736. Cross-listed in Nuclear Engineering.

**737 Heat Transfer Applications in Nuclear Reactor Systems U G 3**

The heat transfer applications in nuclear reactor systems include but are not limited to: heat transfer in PWR and BWR fuel rods, coolant, and reactor internals.

Sp Qtr. 2 1.5-hr cl. Prereq: 636 or Nuclr En 636 and Mech Eng 510 or 500 with permission of instructor. Not open to students with credit for Mech Eng 637, or Nuclr En 637, or 737. Cross-listed in Nuclear Engineering.

**740 Elasticity U G 4**

Classical problems in elasticity; St-Venant torsion and bending theory; plane problems in rectangular and polar coordinates; axisymmetric problems.

Wi Qtr. 4 cl. Prereq: 420 or 440 or Eng Mech 440 or equiv, and prereq or concur: Math 512. Not open to students with credit for Eng Mech 740.

**743 Introduction to Continuum Mechanics U G 4**

Continuum mechanics in Cartesian coordinates, analysis of deformation and stress, balance principles, constitutive equations; introductory concepts in viscoelasticity and plasticity.

Au Qtr. 4 cl. Prereq: 420 or 440 or Eng Mech 440 and Math 255, or equiv. Not open to students with credit for Eng Mech 743.

**751\*\* Application of Computer Graphics to Kinematic Synthesis and Analysis U G 4**

Application of interactive computer graphics to the kinematic synthesis of linkages; extensive use of the RCGL computer graphics facility.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 553 and En Graph 167 or equiv. Not open to students with credit for 651. Offered even numbered years.

**752 Mechanical Design of Manipulators and Robots U G 3**

Principles of hardware and software design of industrial robots and related devices; includes use of actual industrial robot programming procedures.

Au Qtr. 2 1.5-hr cl. Prereq: Eng Mech 430 and Math 568, or permission of instructor.

**753\* Elastic Stability U G 3**

Buckling of struts, rings, arches, and plates; torsional instability; stability criteria, exact and approximate methods.

Au Qtr. 3 cl. Prereq: 420 or 440 or Eng Mech 440 and Math 255, or equiv. Not open to students with credit for Eng Mech 751. Offered odd numbered years.

**754 Land Vehicle Dynamics Lab U G 1**

Lab and field tests of an action vehicle to measure vehicle inertia, geometric, suspension and steering characteristics in order to generate parameters for computer simulations.

Sp Qtr. 1 2-hr lab. Prereq or concur: 654. Existing software packages such as ADAMS, VDANL and MATLAB will be used in solving vehicle dynamic problems using principles of multi-body system analysis.

**755\* Plates and Shells U G 4**

Basic equations; classical solutions and approximate methods in the theory of thin plates; Membrane theory of shells of revolution.

Wi Qtr. 4 cl. Prereq: 420 or 440 or Eng Mech 440 or equiv, and prereq or concur: Math 512. Not open to students with credit for Eng Mech 754. Offered even numbered years.

**760 Form Synthesis and Applied Stress Analysis of Machinery U G 3**

A study of concepts, principles, and procedures related to stresses and strains for the design and analysis of machine parts.

Wi Qtr. 2 1.5-hr cl. Prereq: 562 and 563 or grad standing in engineering. Not open to students with credit for 861. This class is one of the core courses in the M.S. program in Mechanical Engineering.

**761 Optimization in Mechanical Design U G 3**

Application of analytical optimization methods to the solution of deterministic and probabilistic mechanical design problems; introduction to interactive optimization using RCGL computer graphics facilities.

Sp Qtr. 2 1.5-hr cl. Prereq: 562 or 563 or permission of instructor. Not open to students with credit for 661.

**762 Structural Composites U G 3**

An introduction to the analysis and design synthesis of beams, columns, rods, plates, and panels made of structural composites.

Wi Qtr. 3 cl. Prereq: 662, or Civil En 662 or Eng Mech 662 or permission of instructor. Not open to students with credit for Civil En 762 or Eng Mech 762. Cross-listed in Civil Engineering.

**763 Advanced Design of Machine Elements U G 4**

A study of the advanced concepts in mechanical design analysis and failure behavior of materials.

Au Qtr. 2 2-hr cl. Prereq: 562 and 563 or equiv or grad standing in mech eng.

**764\*\* Advanced Gear Design U G 3**

A survey of advanced computer techniques to design spur and helical gears. Techniques will be taught in form of several small and one large capstone project.

Wi Qtr. 4 1-hr cl. Prereq: 562, 563 or permission of instructor. Offered odd numbered years.

**765 Principles of Tribology U G 3**

Mechanisms of friction, wear, and lubrication that govern interfacial behavior; applications of basic theories to solutions of friction and wear problems.

Au Qtr. 2 1.5-hr cl. Prereq: Grad standing or permission of instructor.

**766\*\* Engineering Acoustics U G 3**

A course in engineering acoustics covering the phenomenon by which acoustic energy is generated and transmitted, with applications to mechanical machinery.

Au Qtr. 2 1.5-hr cl. Prereq: 666 or permission of instructor. Offered even numbered years.

**767 Fluid Film Lubrication U G 3**

Hydrodynamic lubrication applied to journal and thrust bearings; elastohydrodynamic lubrication applied to rolling-element bearings and gears.

Wi Qtr. 2 1.5-hr cl. Prereq: 561 or permission of instructor.

**768 Introduction to the Finite Element Method U G 4**

Basic concepts, formulation, and application of finite element techniques for numerical solution of problems in structural and continuum mechanics, geotechnical engineering, and water resources engineering.

Au, Wi Qtrs. 4 cl. Prereq: En Graph 167 or equiv, and Civil En 406 or Math 568 or equiv. Not open to students with credit for Civil En 763 or 768 or Eng Mech 763. Cross-listed in Civil Engineering.

**770 Measurement System Application and Design U G 4**

A theoretical and experimental study of measurement instrumentation; emphasis on both principles of operation and analysis and design techniques for measurement systems of a mechanical and electromechanical nature. Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 570 or grad standing in mech eng or permission of instructor. Not open to students with credit for 671.

**771\*\* Design Of Fiber Optic Systems U G 4**

Introduction to mechanical and systems aspects of fiber optics including wave guiding of light, system components, optical fiber sensors, and design for industrial applications.

Sp Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 570 or permission of instructor. Offered odd numbered years

**772 Control Systems Design Laboratory U G 1**

A study of experimental procedures involved in the analysis and design of feedback control systems including servomechanisms and process control. Sp Qtr. 1 2-hr lab. Prereq or concur: 672.

**773 Applied Digital Control U G 4**

Theory and application of digital control system design techniques to the control of physical systems; lab sessions deal with implementation of controllers using personal computer.

Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 571 or equiv. Not open to students with credit for Mech Eng 673.

**777\* Automotive Noise, Vibration, and Harshness Control II U G 3-4**

An integrated study of acoustics, shock and vibration, and dynamic design issues with emphasis on automotive case studies and problem solving methodology.

Au Qtr. 2 1.5-hr cl (3 cr or option); 4th cr for project work, arr. Prereq: Grad standing in mech eng, elec eng, or permission of instructor. Offered odd numbered years. Part of a sequence emphasizing automotive systems engineering designed for MS degree students and practicing engineers.

**778\* Automotive Noise, Vibration, and Harshness Control III U G 3-4**

Continuation of 777 with focus on source-path-receiver identification, modal analysis, passive/active control, and machinery diagnostics.

Wi Qtr. 2 1.5-hr cl (3 cr or option); 4th cr for project work, time arr. Prereq: 777 or permission of instructor. Offered even numbered years. Part of a sequence emphasizing automotive systems engineering designed for MS degree students and practicing engineers.

**779\* Automotive Noise, Vibration, and Harshness Control III U G 3-4**

Continuation of 778 with focus on advanced modeling and experimental methods, structural-acoustic interactions, and flow-induced noise and vibration.

Sp Qtr. 2 1.5-hr cl (3 cr or option); 4th cr for project work, time arr. Prereq: 778. Offered even numbered years. Part of a sequence emphasizing automotive systems engineering designed for MS degree students and practicing engineers.

**780 Lumped Parameter System Analysis U G 3**

Lumped parameter system analysis of mechanical, thermal, hydraulic, pneumatic, and electromechanical systems; system response to periodic, transient, and random excitation; computer and physical system demonstrations.

Au Qtr. 2 1.5-hr cl. Prereq: Math 415 or permission of instructor. Not open to students with credit for Mech Eng 880.

**781\*\* Powertrain Dynamics G 3**

Overview of the major dynamic phenomena that characterize powertrain behavior. Emphasis on interaction between subsystems. The predominant natural frequencies of the powertrain will be described.

Au Qtr. 3 lec. Prereq: 780 or 880 or equiv, or permission of instructor. Offered even numbered years.

**782\*\* Advanced Topics and Projects in Powertrain Control G 3**

Treatment of advanced topics in control systems as applied to powertrain systems control.

Sp Qtr. 2 1.5-hr cl. Prereq: 781 and Elec Eng 753.01. Offered odd numbered years.

**H783 Honors Program Research U G 1-3**

Honors program students are offered the opportunity to pursue independent project/research. Student presentations and thesis writing included.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in mech eng (or equiv). Students must have a CPHR of at least 3.4 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**784 Energy Modeling of Hybrid-Electric Vehicles G 3**

Energy conversion, storage, utilization and optimization of complete road vehicle systems (conventional or hybrid-electric).

Au Qtr. 2 1.5-hr cl. Prereq: Grad standing or permission of instructor. This is the first course in a series of three graduate courses.

**785 Modeling, Simulation and Control of Hybrid-Vehicles G 3**

Mathematical modeling, computer simulation and control design with application to hybrid-electric vehicles.

Wi Qtr. 2 1.5-hr cl. Prereq: 784 or permission of instructor. This course is the second in a series of three graduate courses.

**786 Hybrid Drivetrain Laboratory G 2**

Experiments on subsystems and systems related to hybrid drivetrains: batteries, transmissions, engines, drivetrains.

Sp Qtr. 1 4-hr lab. Prereq: 784, 785 or permission of instructor. This is the third in a series of three graduate courses.

**787\* Biomechanics U G 3**

Discrete mass and continuum mechanics; description of biological materials; biodynamics of limb and gross body motions; various models for injury to head, neck and torso.

Wi Qtr. 3 cl. Prereq: 420 or 440 or Eng Mech 440 or equiv, and Math 415 or 512, or permission of instructor. Not open to students with credit for Eng Mech 770.

**800\* Methods of Engineering Analysis G 3**

Solution of boundary value, eigenvalue, and initial value problems arising in mechanics by approximate methods; weighted residual and stationary functional methods.

Au Qtr. 3 cl. Prereq: 10 cr hrs of 700-level courses in Eng Mech or Mech Eng and Math 512 or equiv. Not open to students with credit for Eng Mech 800.

**803\* Fundamentals of Thermodynamics II G 3**

Introduction to the fundamentals of thermodynamics from the microscopic viewpoint.

Au Qtr. 2 1.5-hr cl. Prereq: 702. Offered odd numbered years.

**804\*\* Fluid Physics G 3**

The physics of chemically reacting thermodynamically nonequilibrium flowing fluids, with application to energy conversion systems, propulsion, plasma processors, high speed flows, and gas lasers.

Wi Qtr. Prereq: 803 or equiv or permission of instructor. This course is part of a sequence of graduate instruction in the fluid and thermal science area of the Dept of Mechanical Engineering, which treat modern engineering systems for which understanding molecular-scale process is critical. Offered even numbered years.

**805\* Electrical Gas Discharges G 3**

Introduction to the physics of low-temperature plasmas involving electrical discharges in gases. Plasma chemistry and solid-state plasmas are also considered.

Sp Qtr. 2 1.5-hr cl. Prereq: 803 or 804 or equiv or permission of instructor. Offered even numbered years.

**806\* Viscous Flow of Fluids G 3**

Theory of viscous fluids; exact solutions of the Navier Stokes equations, creeping flows, and boundary layers.

Wi Qtr. 2 1.5-hr cl. Prereq: 504. Offered even numbered years.

**807\* Conduction Heat Transfer G 3**

A study of the general heat transfer equations and their application to heat transfer in solids.

Sp Qtr. 2 1.5-hr cl. Prereq: 510. Offered even numbered years.

**808\*\* Laminar Convection Heat Transfer G 3**

Laminar forced convection in pipes; laminar thermal boundary layers and entrance effects; stagnation point heat transfer; free convection boundary layers and plumes.

Wi Qtr. 2 1.5-hr cl. Prereq: 806 and 807. Offered odd numbered years.

**809\*\* Thermal Radiation Heat Transfer G 3**

Black body radiation, gray body approximation, radiation surface properties, radiation exchange in non-participating media, conduction-radiation interaction, convection-radiation interaction, and introduction to radiation in participating media.

Au Qtr. 2 1.5-hr cl. Prereq: 807. Offered even numbered years

**810\*\* Inviscid Flows G 3**

Kinematics of inviscid flows; circulation and vorticity; the structure of vortices; two and three dimensional vortex flows; the Euler equations and the effect of compressibility.

Wi Qtr. 2 1.5-hr cl. Prereq: 705 or equiv. Offered odd numbered years.

**811 Computational Fluid Dynamics G 4**

Advanced numerical methods for solving Navier-Stokes equations as well as equations for inviscid and boundary layer flows.

Sp Qtr. 2 2-hr cl. Prereq: 707 or Aero Eng 615. Not open to students with credit for Aero Eng 870. Cross-listed with Aeronautical and Astronautical Engineering 870.

**813\*\* Turbulent Flow and Heat Transfer G 3**

Study of turbulent flows, with emphasis on the calculation of heat transfer in turbulent internal and external flows.

Sp Qtr. 3 cl. Prereq: 705 and 710. Offered even numbered years.

**814\* Optical Techniques in Reacting and Nonreacting Flows G 3**

Measurements and visualizations based on elastic and inelastic scattering and laser-induced fluorescence and background materials on optics, quantum mechanics, lasers, and detectors.

Wi Qtr. 2 1.5-hr cl. Prereq: Grad standing in engineering/ science. Offered even numbered years.

**815\*\* Multiphase Flow, Heat, and Mass Transfer in Porous Media G 3**

Current theories on flow, heat, and mass transfer in porous media and an understanding of the mechanisms involved in multiphase transport in porous media.

Sp Qtr. 2 1.5-hr cl. Prereq: 806 or permission of instructor. Offered odd numbered years

**818\* Advanced Analytical Methods in Mechanical Engineering G 3**

Transform and Green's function methods for solution of problems arising in heat conduction, vibration of continuous bodies, and mechanics of fluids; asymptotic evaluation of integral representations of these solutions.

Au Qtr. 2 1.5-hr cl. Prereq: 807 or 850 or equiv. Not open to students with credit for 881. Offered odd numbered years.

**820 Wave Dynamics in Fluids G 4**

Small and finite amplitude wave propagation and attenuation in fluids, nonlinear flow-acoustic coupling.

Sp Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 705 or permission of instructor. Not open to students with credit for 894S.

**826\* Combustion G 3**

A study of chemical thermodynamics and kinetics, the basic equations of change, and application of fundamentals to combustion in engineering systems.

Sp Qtr. 2 1.5-hr cl. Prereq: 726 or permission of instructor. Offered even numbered years

**833\* Elastic Wave Propagation G 3**

Dispersion and group velocity; waves in extended media; propagation and reflection in half space; Lamb problem; waves in plates and rods by exact theory scattering of waves.

Sp Qtr. 3 cl. Prereq: 731 or 734 or Eng Mech 731 or 734. Not open to students with credit for Eng Mech 833. Offered even numbered years.

**835\* Random Vibrations G 3**

Description of random processes; statistical properties of the response of mechanical systems; optimization of systems subjected to random inputs; instrumentation.

Au Qtr. 3 cl. Prereq: 731 or Eng Mech 731. Not open to students with credit for Eng Mech 835.

**837\*\* Advanced Topics in Tribology G 3**

Current and advanced research topics in friction, wear, and lubrication vital to the successful operation of machine elements.

Sp Qtr. 2 1.5-hr cl. Prereq: 765 and 767 or permission of instructor. Offered odd numbered years.

**839 Finite Element Method in Engineering Science G 5**

Approximation of boundary value and initial value problems; variational methods, hybrid and mixed method; convergence and accuracy of finite element approximations; recent developments, advanced applications.

Sp Qtr. 5 cl. Prereq: 763 or 768 or Civil En 763 or 768 or Eng Mech 763, and Math 601 or equiv. Not open to students with credit for Civil En 839 or Eng Mech 839. Cross-listed in Civil Engineering.

**840\*\* Theory of Continuous Media G 3**

Equilibrium, compatibility, and strain displacement relationships for a general continuum; constitutive equations for problems of elasticity, fluid dynamics, and inelasticity.

Wi Qtr. 3 cl. Prereq: 740 or Eng Mech 740. Not open to students with credit for Eng Mech 840. Offered odd numbered years.

**843\* Advanced Elasticity G 3**

Complex variable methods; anisotropic elasticity; three-dimensional elasticity; mixed boundary value problems; variational methods.

Wi Qtr. 3 cl. Prereq: 740 or Eng Mech 740. Not open to students with credit for Eng Mech 843.

**844\*\* Advanced Fracture Mechanics G 3**

Treatment of advanced topics in fracture mechanics; elastic-plastic fracture, dynamic crack propagation and arrest, time dependent fracture, fracture of composites, and fatigue crack growth.

Sp Qtr. 3 cl. Prereq: 644 or Eng Mech 644 or permission of instructor. Not open to students with credit for Eng Mech 844. Offered odd numbered years.

**847\*\* Theory of Plasticity G 3**

Plastic range stress-strain relations; elasto-plastic behavior of beams and trusses; torsion of prismatic bars, plane strain; shear lines; limit analysis. Wi Qtr. 3 cl. Prereq: 740 or Eng Mech 740 and Math 512. Not open to students with credit for Eng Mech 847. Offered odd numbered years.

**850\*\* Advanced Methods of Vibration Analysis G 3**

Analytical methods for the formulation, solution, and physical understanding of conservative and non-conservative vibratory systems. Gyroscopic and damped systems. Approximate methods.

Wi Qtr. 2 1.5-hr cl. Prereq: 731 or equiv. Offered odd numbered years.

**851\*\* Kinematic Geometry of Mechanisms G 3**

Kinematics and statics of spatial mechanisms including robotic mechanisms. Sp Qtr. 2 1.5-hr cl. Prereq: 752 or permission of instructor. Offered even numbered years.

**855\* Advanced Shells G 3**

Differential geometry of surface; general equations for arbitrary shell; solutions to membrane and bending equations.

Sp Qtr. 3 cl. Prereq: 755 or Eng Mech 754. Not open to students with credit for Eng Mech 855.

**859\* Sliding Mode Control in Electro-Mechanical Systems G 3**

Sliding mode control for decoupling of the design procedure and low sensitivity with respect to uncertainties, and application to control of electromechanical systems.

Au Qtr. 3 1-hr cl. Prereq: 571 or Elec Eng 551. Cross-listed in Electrical Engineering. Offered odd numbered years.

**860\*\* Advanced Mechanical Design G 3**

A study of concepts, principles, and phenomenological theories related to the failure-prevention aspect of mechanical design.

Au Qtr. 2 1.5-hr cl. Prereq: 561 and Math 415. Offered even numbered years.

**862\*\* Advanced Mechanics of Structural Composites G 3**

An introduction to current important topic areas in structural composites; among these topics are fracture mechanisms and models, energy method modeling, dynamic structural response, and numerical modeling schemes.

Sp Qtr. 2 1.5-hr cl. Prereq: 762 or Civil Eng 762 or Eng Mech 762 or permission of instructor. Not open to students with credit for Civil En 862 or Eng Mech 862. Offered even numbered years. Cross-listed in Civil Engineering.

**864\*\* Theory of Viscoelasticity G 3**

Basic concepts of time dependent inelastic behavior; viscoelastic constitutive laws; correspondence principles; quasi-static and dynamic problems.

Sp Qtr. 3 cl. Prereq: 740 or Eng Mech 740. Not open to students with credit for Eng Mech 864. Offered odd numbered years.

**866\* Hydrodynamic Stability of Fluid Motions G 4**

Instability of inviscid and viscous parallel flows; thermal and centrifugal instability boundary-layer transition; and concepts of linear, nonlinear, and secondary instability analysis.

Sp Qtr. 2 1.5-hr cl. Prereq: Aero Eng 570 or 800 equiv, or permission of instructor. Not open to students with credit for Aero Eng 866. Offered even numbered years. Cross-listed in Aeronautical and Astronautical Engineering.

**870\* Digital Signal Analysis of Mechanical Systems G 3**

Conceptual, measurement, and numerical aspects of digital data acquisition and signal processing, random data analysis, and system identification and diagnostic techniques used for mechanical systems.

Sp Qtr. 2 1.5-hr cl. Prereq: 880 or permission of instructor. Offered even numbered years.

**873\* State Space Methods for Dynamic Systems Analysis and Control G 3**

Application of state-space methods to the analysis and synthesis of dynamic systems with emphasis on control applications.

Wi Qtr. 2 1.5 cl. Prereq: Math 568 or equiv and Mech Eng 571 or equiv, or permission of instructor. Not open to students with credit for Elec Eng 750. Offered even numbered years.

**874\*\* Fault Diagnosis in Mechatronic Systems G 3**

Fault detection and diagnosis in engineering systems based on dynamic models. Theory and case studies drawn from industrial application.

Wi Qtr. 2 1.5-hr cl. Prereq: 780 or Elec Eng 750 or Aero Eng 720 or permission of instructor. Offered odd numbered years.

**882\* Modeling of Dynamic Systems G 4**

A study of theoretical, experimental, and computer methods for characterizing the dynamic behavior of complex systems.

Sp Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 880 or permission of instructor. Offered even numbered years.

**883\*\* Life-Cycle Design Optimization G 3**

Life-cycle optimization of competitive products with emphasis on mathematical tools and real-world examples.

Sp Qtr. 2 1.5-hr cl. Prereq: 661 or 862 or permission of instructor. Offered odd numbered years.

**888 Mechanical Engineering Seminar G 1**

Lecture and discussion of current topics related to mechanical engineering presented by graduate students, staff, and guest speakers.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Mech eng grad standing. Repeatable. Does not count toward course work required for MS or Phd degrees. This course is graded S/U.

**894 Group Studies in Mechanical Engineering G 1-6**

Special topics in mechanical engineering. The particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**993 Advanced Problems in Mechanical Engineering G 1-5**

Provides the opportunity to pursue special problems in mechanical engineering not otherwise covered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**999 Research in Mechanical Engineering G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Medical Dietetics

School of Allied Medical Professions

516 Atwell Hall, 1583 Perry Street, 292-0635

**201 Careers in Dietetics U 1**

Roles, responsibilities, and educational requirements for a career in dietetics; current employment opportunities.

Wi Qtr. 1 cl.

**420 Management in Medical Dietetics U 5**

Application of management process to nutritional care of patients in the health care institution.

Sp Qtr. 5 cl. Prereq: Humn Ntr 310, 314, 350, and 370; Alli Med 630.

**422 Food Service Systems Practicum U 6**

Applications of food service management in health care institutions.

Su, Au, Wi, Sp Qtrs. 32 hrs/wk in practice setting (6 wks). Prereq: 420 or equiv. Enrollment in med diet. This course is graded S/U.

**520 Nutrition and Human Metabolism I U 5**

Application of medical nutrition therapy in prevention and disease states.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq: 545 or Humn Ntr 610; Med Diet 546.

**521 Nutrition and Human Metabolism II U 5**

A continuation of 520.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: 520 or equiv.

**530 Nutritional Care Process U 4**

Gathering and evaluating assessment data for planning, implementing, documenting and evaluating nutritional care. Nutrition counseling theory, practice and evaluation.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 520 or Humn Ntr 612.01.

**545 Human Nutrition and Dietetics U 4**

Integration of principles related to foods, nutrients, physiology, and biochemistry as they apply to nutritional care for the promotion of health and prevention of disease.

Au Qtr. 4 cl. Prereq: Chem 102, Biology 101, and Humn Ntr 310 and 314.

**546 Physical and Nutritional Assessment U 2**

Methods of gathering, interpreting, and reporting nutritional assessment information.

Au Qtr. 1 hr cl, 3-hr lab. Prereq: Humn Ntr 310; EEOB 232 or Zoology 232 or equiv.

**595 Seminar U 1-3**

Conferences, group discussions, and presentations of selected topics.

Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor.

**620 Management Applications in Dietetics U 3**

Emphasis on managerial skills in food service or nutrition care units in health care organizations.

Sp Qtr. 2 1.5-hr cl. Prereq: 420 or equiv.

**622 Human Resource Management in Dietetics U 3**

Emphasis on human resource development in nutrition and food service environment.

Wi Qtr. 3 cl. Prereq: 420 or equiv.

**636 Nutrition Education and Counseling U 3**

Principles of individual and group teaching and nutrition counseling as applied to responsibilities of the dietitian.

Wi Qtr. 2 cl, 3-hr lab. Prereq: Humn Ntr 310.

**637 Health Promotion and Community Nutrition**

Study of nutrition and health risk appraisal, intervention strategies, and cost effectiveness of risk reduction for selected populations in public and private health programming.

2 1.5-hr cl. Prereq: Humn Ntr 310.

**637.01 Basic Concepts in Health Promotion and Community Nutrition U 3**

Au Qtr.

**637.02 Advanced Concepts in Health Promotion and Community Nutrition U 3**

Wi Qtr. Prereq: 637.01 or Humn Ntr 704.

**638 Maternal and Pediatric Nutrition U 3**

Physiological basis of nutritional needs for pregnancy, lactation, infancy, and childhood. Nutritional management of selected pediatric disorders in hospitalized and ambulatory infants and children.

Wi Qtr. 2 1.5-hr cl. Prereq: Humn Ntr 310 or 506 or permission of instructor.

**639 Geriatric Nutrition U 3**

Study of nutritional requirements, nutritional status assessment, and other selected issues in delivery of health care to older adults.

Sp Qtr. 3 cl. Prereq: Humn Ntr 506 or permission of instructor.

**645 Advanced Medical Dietetics U 3**

Study of medical nutrition therapy in trauma and hypermetabolic conditions. Emphasis on enteral and parenteral nutrition.

Wi Qtr. 2 1.5-hr cl. Prereq: 521 or Humn Ntr 612.02, or permission of instructor.

**646 Medical Nutrition Therapy Practicum U 10**

Clinical experiences and post clinical conferences with emphasis on assuming responsibility for patient nutrition care in the acute care, community, and out-patient settings.

Su, Au, Wi, Sp Qtrs. 1 cl, 32 hrs clinic. Prereq: Sr standing in Medical Dietetics and permission of instructor. May require travel to off-campus clinical facility. This course is graded S/U.

**685 Dietetics Practicum**

Clinical experience and post-clinical conferences with emphasis on observation and practice in pediatric, geriatric, community, and health promotion sites.

Su, Au, Wi, Sp Qtrs. 2 cl, 32 hrs clinic (4 wks). Prereq: Sr standing in med diet. Not open to students with credit for 689.

**685.01 Long-Term/Subacute Nutrition Care Practicum U 4**

Not open to students with credit for 689.01. This course is graded S/U.

**685.02 Community Dietetics Practicum U 4**

Not open to students with credit for 689.03. This course is graded S/U.

**688 Medical Dietetics Advanced Practicum U 6**

Supervised professional practice in various health care settings.

Su, Sp Qtrs. 1 cl, 40 hrs clinic (7 wks). Prereq: 422 and 646; permission of instructor. Not open to students with credit for 646.04. May require travel to off-campus clinical facility. This course is graded S/U.

**688.01 Advanced Practice in Subacute/Long-Term Care Dietetics U 6**

This course is graded S/U.

**688.02 Advanced Practice in Community Dietetics U 6**

This course is graded S/U.

**688.03 Advanced Practice in Medical Nutrition Therapy U 6**

This course is graded S/U.

**688.04 Advanced Practice in Nutrition Counseling and Education U 6**

Su, Sp Qtrs. This course is graded S/U.

**693 Individual Studies in Nutrition or Dietetics U G 1-5**

Problems in various phases of nutrition or medical dietetics not included in current course offerings.

Su, Au, Wi, Sp Qtrs. Prereq: Grad or sr standing in med diet and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**695 Seminar U G 1-3**

Conferences and group discussions of selected topics.

Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.



**720 Management Applications in Dietetics G 3**

Emphasis on leadership skills for nutrition and dietetics in health care settings.

Sp Qtr. 2 1.5-hr cl. Prereq: Approved undergrad program in dietetics.

**838 Maternal and Pediatric Nutrition**

Physiology of pregnancy and lactation including women with special needs; physiology of the neonate, normal growth and development 0-12 months, and nutritional disorders of infancy.

Prereq: Grad standing, 5 hrs physiology and biochemistry, Humn Ntr 310 or above, permission of instructor.

**838.01 Physiological and Theoretical Bases for Maternal and Pediatric Needs G 3**

Physiology of pregnancy and lactation including special needs; physiological changes in the neonate; normal growth and development during the first year; and nutritional disorders of the pediatric patient.

Sp Qtr. 3 cl.

**838.02 Clinical Applications in Maternal and Pediatric Nutrition G 2**

Experiences in the perinatal and pediatric setting to enhance the students' clinical assessment and counseling skills in these specialized settings. 6 hrs clinical. This course is graded S/U.

**856 Nutrition in Critical Care**

The pathophysiological background in systemic disease, surgical intervention and nutritional interrelationships among disease, treatments, and nutrition.

Au Qtr. 2 1.5-hr cl. Prereq: Permission of instructor. Not open to students with credit for Prev Med 856.

**856.01 Lecture G 3**

Au Qtr. 2 1.5-hr cl.

**856.02 Practicum G 2**

Au Qtr. 1 4-hr clinic. This course is graded S/U.

**857\* Nutrition and Metabolic Imbalance G 3**

The pathophysiological background of metabolic imbalances encountered in the clinical setting and the rationale for nutritional therapies.

Wi Qtr. 2 1.5-hr cl. Prereq: 856.01, Fd Sc&Nu 761 or permission of instructor.

**858\* Community Nutrition G 3**

Methods of discovering problems in public health nutrition and practical application of nutrition information for improvement of nutritional status at various age levels.

Au Qtr. 2 1.5-hr cl. Prereq: 638 and 856, or permission of instructor. Not open to students with credit for Prev Med 858.

**889 Clinical Practicum**

Advanced, specialized orientation to clinical dietetics including resource and patient management through individual conferences, group conferences, team conferences, and clinical practice.

Prereq: Permission of instructor. Subdivisions are repeatable to a maximum of 10 or hrs.

**889.01 Crisis Care Practicum G 2-5**

Su, Au, Wi, Sp Qtrs. 3 clinic hrs/credit. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

**889.02 Primary Care Practicum G 2-5**

1 cl, 16-hrs clinic. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

## Medical Technology

School of Allied Medical Professions

535 Atwell Hall, 1583 Perry Street, 292-7303

For related courses see Pathology.

**480 Fundamental Techniques in Clinical Laboratory Science**

Application of theory and fundamental clinical laboratory techniques with emphasis on phlebotomy, basic instrumentation, laboratory calculations, specimen processing and professional issues.

Au Qtr. Prereq: Admission to Med Tech or permission of instructor.

**480.01 Lecture U 2**

Theory and applications of fundamental clinical laboratory techniques, principles, basic spectrophotometry, laboratory calculations, specimen processing and professional issues.

2 cl.

**480.02 Laboratory U 2**

Laboratory applications of basic spectrophotometry, phlebotomy, specimen processing.

2 3-hr labs.

**500 Clinical Laboratory Microbiology U 6**

Basic theory and application of clinical laboratory techniques used to identify microorganisms pathogenic to humans.

Au Qtr. 3 cl, 3 3-hr labs. Prereq: Admission to Division of Med Tech or permission of instructor.

**510 Clinical Laboratory Hematology**

Basic theory and application of clinical laboratory techniques used to evaluate the formed elements in blood and the hemostatic mechanism.

Wi Qtr. Prereq: 480 or permission of instructor.

**510.01 Lecture U 3**

Wi Qtr. 2 1.5-hr cl. Concur: 510.02.

**510.02 Laboratory U 2**

Wi Qtr. 2 3-hr labs. Concur: 510.01.

**515 Advanced Clinical Laboratory Hematology**

Advanced theory and application of clinical laboratory techniques used to evaluate the formed elements of the blood and hemostatic mechanism.

Au Qtr. Prereq: 480, 510.01, 510.02, or permission of instructor.

**515.01 Lecture U 3**

2 1.5-hr cl. Concur: 515.02.

**515.02 Laboratory U 2**

2 3-hr labs. Concur: 515.01.

**525 Advanced Clinical Laboratory Microbiology U 4**

Theory and application of clinical laboratory techniques used to identify fungi, parasites and viruses pathogenic to humans.

Wi Qtr. 2 cl, 2 3-hr labs. Prereq: 480.01, 480.02, 500, 530.01, 530.02, or permission of instructor.

**530 Clinical Laboratory Immunology**

Theory and application of clinical laboratory techniques employing antigen-antibody reactions in the study of disease.

Sp Qtr. Prereq: 480 and permission of instructor.

**530.01 Lecture U 3**

2 1.5-hr cl. Concur: 530.02.

**530.02 Laboratory U 2**

2 3-hr labs. Concur: 530.01.

**535 Introduction to Immunohematology**

Theory and application of clinical laboratory immunologic techniques for blood grouping, antibody identification, and preparation of blood components for transfusion therapy.

Prereq: 480 or permission of instructor.

**535.01 Lecture U 2**

Au Qtr. 2 cl. Prereq: Admission to Med Tech or permission of instructor. Concur: 535.02.

**535.02 Laboratory U 2**

Au Qtr. 2 3-hr labs. Prereq: Admission to Med Tech or permission of instructor. Concur: 535.01.

**545 Clinical Chemistry**

Sp Qtr. Prereq: 480 or permission of instructor.

**545.01 Lecture U 3**

Principles of clinical chemistry methods, with an emphasis on principles of analysis, reference range and correlation of biochemical parameters with disease.

2 lec, 1 2-hr rec. Concur: 545.02.

**545.02 Laboratory U 2**

Laboratory applications of clinical chemistry test principles.

2 3-hr labs. Concur: 545.01.

**550 Professional Writing in Medical Technology**

1 cl. GEC courses.

**550.01 Professional Writing I U 1**

Synthesis of medical technology literature, development of library search skills, oral presentations.

Au Qtr. Prereq: Admission to Med Tech or permission of the instructor.

**550.02 Professional Writing II U 2**

Continuation of 550.01.

Au Qtr. Prereq: 550.01 or permission of the instructor.

**560 Clinical Laboratory Data Correlations U 2**

A case study approach for integrating medical laboratory results contributing to a laboratory diagnosis and understanding of pathophysiology.

Au Qtr. 2 cl. Prereq: 550.01 or permission of instructor. GEC course.

**569 Clinical Practice in Laboratory Science U 12**

Application of medical laboratory techniques under supervision in clinical laboratories or other non-hospital laboratory settings.

Su, Au, Wi, Sp Qtrs. 280 hrs. Prereq: All Med Tech and Pathol undergrad courses for the professional curriculum except 579. OSU and/or non-OSU laboratory sites available. This course is graded S/U.

**570 Body Fluid Analysis U 3**

Physical, chemical and microscopic analysis of urine and other body fluids including correlational pathophysiology.

Wi Qtr. Prereq: 480.01/480.02, 500.01/500.02, 545.01/545.02 or permission of instructor.

**579 Clinical Practice in Transfusion Service U 2**

Application of medical laboratory techniques under supervision in immunohematology and transfusion service.

Su, Au, Wi, Sp Qtrs. Prereq: 535.01, 535.02, 635.01, 635.02, Pathol 505. OSU and non-OSU laboratory sites available. This course is graded S/U.

**595 Seminar U 1-3**

Discussion of issues and trends in laboratory medicine; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to Med Tech and permission of instructor. Repeatable. This course is graded S/U.

**610 Administration in Laboratory Medicine G 3**

Principles of administration applied to the management of health care services in laboratory medicine.

Wi Qtr. 3 cl. Prereq: Grad standing in Pathol or All Med, pathol resident or permission of instructor. Cross-listed in Pathology.

**635 Advanced Immunohematology**

Serological techniques and problem solving in transfusion medicine.

Wi Qtr. Prereq: 535.01; 535.02 or permission of instructor.

**635.01 Lecture U G 2**

2 cl. Concur: 635.02.

**635.02 Laboratory U G 2**

2 3-hr labs. Concur: 635.01.

**645 Advanced Laboratory Operations and Techniques U 4**

Applications of theory and quality control, method evaluation and selection, and advanced diagnostic techniques with an emphasis on instrumentation, automation, and problem-solving.

Wi Qtr. 2 1-hr lec, 1 3-hr lab. Prereq: 480, 545 or permission of instructor.

**693 Individual Studies U G 1-15**

Guided study or individual readings, research, or experiences related to medical technology.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to Med Tech or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**Medicine and Public Health, College of**

209 Meiling Hall, 370 West 9th Avenue, 292-5674

**661 MED I: Medical Humanities and Behavioral Sciences P 4,8**

A multidisciplinary study of human behavior and sexuality, ethics, and the relationships of the physician with patient, self, family, and society.

Au, Wi, Sp Qtrs. Prereq: Enrollment in College of Medicine. Registered medical students only. Repeatable to a maximum of 24 cr hrs. This is a Progress course. This course is graded S/U.

**662 MED I: Basic Medical Sciences P 4-6,8,16,20,24**

Study of the whole human in an unified, patient-oriented interdisciplinary manner; study of various aspects of normal life processes by means of history taking, physical examinations, and diagnostic techniques in preparation for subsequent study of the ill patient, disease entities, and methods of treatment.

Au, Wi, Sp Qtrs. Concur: 661. Repeatable. This is a Progress course. This course is graded S/U.

**663 MED II: Pathophysiology and Manifestation of Disease P 4-6,8,16,24**

A multidisciplinary presentation of disease mechanisms, correlation of abnormalities of structure and function with cardinal symptoms and manifestations of disease; discussion of differential diagnosis of the most common patient complaints to reinforce the concepts and mechanisms of disease processes.

Au, Wi, Sp Qtrs. Prereq: 662. Repeatable to a maximum of 216 cr hrs. Repeatable. This is a Progress course. This course is graded S/U.

**664 MED III and IV: Clinical Medicine P 4-6,8,16,24**

Didactic and clinical instruction in family medicine, internal medicine, neurology, obstetrics and gynecology, pediatrics, psychiatry, and surgery; experience in outpatient, community, and inpatient services.

Su, Au, Wi, Sp Qtrs. Prereq: 663. Repeatable. This is a Progress course. Must repeat 152 cr hrs. This course is graded S/U.

**689 Practicum in Medicine P 0**

Applied experiences in medicine for 3rd and 4th year medical students rotating through clinical disciplines, externship experiences for medical students chosen for competitive programs at various agencies for field experience.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Med students with permission of Dean's Office. Repeatable to a maximum of 4 quarters. This course is graded S/U.

**693 Individual Studies P 4,5,8,16,24**

Special studies in introduction to medicine; nature of life processes; the pathophysiology and manifestation of disease; and supervised individualized program.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Permission of instructor. Limited to students working toward the MD degree. Repeatable to a maximum of 96 cr hrs. This course is graded S/U.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

3 cl. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology.

**700.01 Interprofessional Care U P G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

Wi Qtr. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**700.02 Changing Societal Values U P G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumer/clients/patients.

Sp Qtr. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**700.03 Ethical Issues U P G 3**

Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, mind control, malpractice, and social responsibility of the professions.

Au Qtr. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**700.04 Interprofessional Practicum in Clinical Settings P 3,5**

Interprofessional teamwork in clinical settings.

Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**700.07 Interprofessional Approaches to Child Abuse and Neglect G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

Au Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**797 Interdepartmental Seminar P G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Repeatable by permission.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. This course is graded S/U.

**Medieval and Renaissance Studies**

256 Cunz Hall, 1841 Millikin Road, 292-7495

**210 Court of Charlemagne U 5**

The Carolingian Renaissance: a unified interpretation of a crucial period in the transition of Europe from the classical age to the early Middle Ages.

2 2-hr cl. GEC arts and hums cultures and ideas course.

**212 Culture of a City-State in the Renaissance U 5**

The study of an Italian Renaissance city-state with attention to its political, social, and economic structure; its religious, intellectual, and artistic activity.

2 2-hr cl. GEC arts and hums cultures and ideas course.

**213 Medieval Moscow U 5**

The diversity of medieval Russian culture as represented by Moscow: religion, society, politics, art, and architecture.

2 2-hr cl. GEC arts and hums cultures and ideas course.

**214 Golden Age of Islamic Civilization U 5**

The Baghdad Caliphate of Harun ar-Rashid from 786 to 861 A.D.

2 2-hr cl. GEC arts and hums cultures and ideas course.

**215 Gothic Paris: 1100-1300 U 5**

Medieval Paris, its art, music, history, theatre, literature, and important individuals.

2 2-hr cl. GEC arts and hums cultures and ideas course.

**216 The Medieval Jewish Experience U 5**

A survey of ten centuries of medieval Jewish culture from the rise of Islam to the death of Shabbetai Zvi, the false Messiah (1676).

2 2-hr cl. Not open to students with credit for Hebrew 216. Cross-listed in Hebrew. GEC arts and hums cultures and ideas course.

**217 Early Modern London U 5**

An exploration of the history, politics, and culture of London beginning with the Protestant Reformation and ending with the great fire of London in 1666. 2 2-hr cl. GEC arts and hums cultures and ideas course.

**218 Colonial Mexico: The Medieval and Renaissance Legacy U 5**

An examination of how Medieval and Renaissance cultural sites were reframed and recreated in Colonial Mexico to construct new identities and cultural expressions.

2 2-hr cl. Not open to students with credit for Spanish 330, except by permission of director of the Center for Medieval and Renaissance Studies. GEC arts and hums cultures and ideas course.

**219 The Golden Age of the Netherlands 1500-1672: From Antwerp to Amsterdam U 5**

Examination of factors (economic, religious, political) contributing to the transformation of Antwerp and subsequently Amsterdam and the responsive and influential role of the arts.

2 2-hr cl. GEC arts and hums VPA course.

**226 Sailing to Byzantium: An Introduction to Medieval Constantinople U 5**

The cultural legacy of Byzantium; popular culture, court life, art, and literature seen through the eyes of Byzantines and Western travelers.

Wi Qtr. 2 2-hr cl. Not open to students with credit for Classics 226. Cross-listed in Classics. GEC arts and hums cultures and ideas course.

**294 Group Studies U 3-5**

Topic varies; special subjects not covered by regular courses.

Arr. Repeatable to a maximum of 20 cr hrs.

**504 The Arthurian Legends U 5**

The medieval tales of King Arthur's court and the Knights of the Round Table in history, myth, literature, art, and music.

Prereq: 10 cr hrs in literature. Not open to students with credit for Comp Stds 504 or 510.

**610 Manuscript Studies U G 5**

An examination of the development of Latin book production from late antiquity to the Renaissance in the cultural context of the Middle Ages.

2 2-hr cl. Prereq: Jr, sr, or grad standing.

**692 Workshop U G 1-8**

arr cl. Prereq: Varies with the topic offered. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies U 1-5**

Students may register for individual directed study under this number for work not normally offered in courses.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Open only to majors in medieval. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Interdisciplinary group studies of selected topics in medieval and Renaissance culture and civilization.

Prereq: 10 cr hrs in medieval at the 200 level. Repeatable to a maximum of 15 cr hrs.

**695 Advanced Seminar in Medieval and Renaissance Studies U G 5**

A seminar in interdisciplinary research and analysis providing experience in presenting ideas in oral and written form.

2 2-hr cl. Prereq: Jr, sr, or grad standing; or permission of instructor. Repeatable to a maximum of 15 cr hrs. GEC third writing course.

**H783 Honors Research U 3-5**

A program of study will be arranged for each student, with individual conferences, reports, and Honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in the student's major area of study and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the BA degree with distinction in Medieval and Renaissance studies. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 5**

Two or more departments may collaborate in presenting colloquia on studies of mutual interest; topics to be announced.

1 or 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**899 Interdepartmental Seminar in the Humanities G 5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

1 or 2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

## Microbiology

376 Biological Sciences Building, 484 West 12th Avenue, Tel: 292-2301; Fax: 292-8120.

Web page: <http://www.biosci.ohio-state.edu/microbio/microbio.html>

**General Prerequisites for Courses Numbered 600 and 700**

Unless otherwise indicated the prerequisites for 600- and 700-level courses are courses in organic chemistry and 10 hours of biological sciences.

**294 Group Studies U 1-5**

Study of selected topics in microbial and cellular biology.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**301 The Biology of Pollution U 2**

A general consideration of the interactions of environmental pollutants and biological systems.

Au Qtr. 2 cl. Credit does count toward a major in microbiol. NS Admis Cond course.

**509 Basic and Practical Microbiology U G 5**

Provides an understanding of microorganisms and their interaction with the human experience.

Su, Au, Wi, Sp Qtrs. 3 cl, 2 2-hr labs. Prereq: Biology 101 or 110 or 113 or H115 or Zoology 201. GEC bio sci course. NS Admis Cond course.

**520 General Microbiology I U G 6**

Fundamental principles of microbiology and the characteristics of microorganisms with emphasis on their structure, molecular biology, growth and classification.

Au Qtr. 3 cl, 2 3-hr labs. Prereq: Biology 114 or H116 and Chem 251. May not be taken concur with 509. GEC third writing course.

**521 General Microbiology II U G 6**

Continuation of 520; basic principles of microbiology with emphasis on physiology ecology, and biotechnology, ecology, and applied pathogenic microbiology.

Wi Qtr. 3 cl, 2 3-hr labs. Prereq: 520 and Chem 252. May not be taken concur with 520. GEC third writing course.

**522 Immunobiology U G 5**

Cellular and molecular properties of the immune system.

Sp Qtr. 3 cl, 2 2-hr labs, 1 rec. Prereq: 520 for majors; 509 for nonmajors.

**524 Microbial Disease**

Sp Qtr. Not open to students with credit for 724.

**524.01 Mechanisms of Microbial Disease U G 4**

Overview of microbe-host interactions with an emphasis on pathogenic mechanisms of microorganisms; the influence of the etiologic agent, route of contact, host species, and the environment.

2 2-hr cl. Prereq: 522

**524.02<sup>^</sup> Microbial Disease Laboratory U G 2**

Methods of isolation and identification of microbial pathogens.

2 2-hr labs. Prereq: 522 and concur: 524.01.

**581 Microbial Genetics U G 5**

Structure, maintenance, expression, and exchange of genetic materials in microbial cells.

Au Qtr. 3 cl, 1 2-hr. Prereq: 520 or Mol Gen 500. Not open to students with credit for 680.

**603<sup>^</sup> Introduction to Biophysics U G 5**

Introductory course in the approach to biological phenomena from conceptual viewpoint of physical sciences; molecular to organismic levels of biological hierarchical structure.

Au Qtr. 5 cl. Prereq: Math 152, Chem 252, 10 cr hrs in biological sciences, Physics 113, or equiv with permission of instructor.

**H610 Bioinformatics and Molecular Microbiology U G 5**

Application of computational tools to the analysis of genomes and their gene products.

Sp Qtr. 2 2.5-hr labs. Prereq: 581 or Mol Gen 605, and Biochem 511; or permission of instructor.

**629<sup>^</sup> Protozoa and Immunity U G 5**

Cell biology and immunology of parasitism in the context of pathogenic protozoa of humans; lab: fresh and preserved materials; immunity of bloodstream trypanosomes; literature research project.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 522 or permission of instructor.

**632 Cellular Aspects of the Immune Response****632.01<sup>^</sup> Lecture U G 3**

Cellular and molecular mechanisms of the immune response; characterization of cell products elaborated subsequent to antigenic stimulation; significance of these products in immunologic response.

Au Qtr. 3 cl. Prereq: 522 or equiv with permission of instructor.

**632.02<sup>^</sup> Laboratory U G 3**

Laboratory techniques in cellular immunology, including an assessment of lymphocyte and macrophage function flow cytometry, production of monoclonal antibody, and biological response modifiers.

Au Qtr. 2 3-hr labs, 1-hr recit. Prereq or concur: 632.01 or equiv, and permission of instructor.

**634<sup>^</sup> Water Microbiology U G 3**

A basic study of the relationships and influence of aquatic environments on microorganisms and the effect of microbial metabolic processes on the quality of water.

Wi Qtr. 3 cl. Prereq: 521.

**636 Food Microbiology U G 5**

Microorganisms in relation to the production, processing and handling of food with emphasis on sanitation and public health problems.

Au, Sp Qtrs. 3 cl; 2 2-hr labs, 1 discussion. Prereq: 509 or 521. Not open to students with credit for Fd Sc&Te 622 or 636. Cross-listed in Food Science and Technology.

**641<sup>^</sup> Introduction to Quantum Biology U G 5**

An introduction to applications of elementary quantum mechanics to problems in biology; stress on conceptual rather than mathematic aspects.

Wi Qtr. 5 cl. Prereq: Chem 123, Math 152, Physics 113, and 10 cr hrs in biological sciences.

**647 Eukaryotic Pathogens U G 3**

Pathogenesis virulence factors, host-parasite interactions, ecology, epidemiology, immunity, laboratory diagnosis, and chemotherapy of eucaryotic pathogens.

Au Qtr. 2 1.5-hr cl. Prereq: 520 or 524, or Biochem 511, or Mol Gen 500 or 501, or permission of instructor. Not open to students with credit for MVIMG 647. Cross-listed in Molecular Virology, Immunology and Medical Genetics.

**649 Introductory Virology U P G 5**

Basic principles of virology with discussion of structures; virus-host cell interactions, detection, production and control; animal bacterial, insect and plant viruses used as examples.

Wi Qtr. 2 2-hr cl, 1 hr rec. Prereq: 520.

**655<sup>^</sup> Animal Cell Culture Techniques U G 5**

Basic principles of tissue culture and organ culture; application of these procedures to basic and applied research in immunology and virology.

Au Qtr. 2 3-hr labs, 1 2-hr rec. Prereq: 522 or equiv, with permission of instructor.

**661 General Microbial Physiology U G 5**

Principles of microbial growth, of metabolism, of microbial structure and function, and regulation of microbial metabolism.

Wi Qtr. 5 cl. Prereq: 521 and Biochem 511. GEC third writing course.

**664<sup>^</sup> Microbial Ecology U G 3**

A study of microbial functions, interactions and diversity as influenced by biological, chemical and physical factors in the environment.

Wi Qtr. 3 1-hr cl. Prereq: 521. Not open to students with credit for 665.

**665<sup>^</sup> Environmental Microbiology U G 3**

The role of microorganisms and underlying biological principles in elemental cycles and degradation of natural and man-made compounds.

Sp Qtr. 3 cl. Prereq: 521 or equiv, and Chem 251. Not open to students with credit for Agronomy 665 or H&CS 665. Not available for audit. Cross-listed in Horticulture and Crop Science.

**680 Advanced Microbial Genetics U G 3**

Molecular mechanisms of gene regulation in prokaryotes; mechanisms of gene transfer and recombination.

Sp Qtr. 3 cl. Prereq: 581, or Mol Gen 501 or 605, or equiv.

**692 Workshop U G 1-6**

Intensive study of a topic in microbiology; the format will depend upon the topic.

Arr cl. Prereq: Written permission of workshop director. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693 Individual Studies U G 1-5**

Outlined by instructor to meet individual student's needs.

Su, Au, Wi, Sp Qtrs. Prereq: Microbiol 4th yr major or grad standing and permission of instructor. Not open to Plan B MS students. Repeatable to a maximum of 15 cr hrs. Not repeatable by grads. No more than 5 cr hrs can be counted toward an undergrad microbiol major. This course is graded S/U.

**694 Group Studies U G 2-5**

Group work on special topics in microbial or cellular biology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**701 Cellular and Molecular Immunology U G 5**

Cellular and molecular mechanisms of immune response, cell recognition and communication, molecular biology of cell recognition structures, cytokines, and effector mechanisms.

Au Qtr. 5 cl. Prereq: Biochem 613, Mol Gen 501 or equiv. Not open to students with credit for Med Micr 701. Cross-listed in Medical Microbiology and Immunology.

**720 Molecular Basis for Microbial Biodiversity G 4**

Introduction to the diversity of organisms found in the microbial world and molecular mechanisms by which select organisms adapt or modify the environment.

Au Qtr. 2 2-hr cl. Prereq: 521, Biochem 511, and Mol Gen 500; or equivs; or permission of instructor.

**723 Molecular Immunology**

Molecular biological properties of antibodies, T-cell receptors, cytokines, complement and MHC.

**723.01<sup>^</sup> Lecture U G 3**

Wi Qtr. 3 cl. Prereq: 522 or equiv with written permission of instructor.

**723.02<sup>^</sup> Laboratory U G 3**

Wi Qtr. 2 4-hr labs. Prereq or concur: 723.01.

**724<sup>^</sup> Molecular Biology of Bacterial Pathogens U P G 5**

In-depth presentation and discussion of the molecular biology and genetics of bacterial pathogens, emphasizing current research in the field.

Sp Qtr. 2 2-hr lec, 1-hr rec. Prereq: Grad standing, advanced undergrads must have permission of instructor.

**730<sup>^</sup> Immunology of Parasitic Infections U P G 2**

A discussion of the role of immunity in the production, course, pathogenicity, diagnosis, and control of parasitic infections of humans and/or domestic animals.

Au Qtr. 2 cl. Prereq: Basic courses in parasitology and immunology; permission of instructor. Not open to students with credit for Vet Path 730. Repeatable to a maximum of 4 cr hrs. Content varies according to major interests of class. Protozoa-arthropods taught in odd yrs; helminths in even yrs. Cross-listed in Veterinary Pathobiology.

**736 Advanced Food Microbiology G 3**

Microbiological aspects of food preservation, detection of microbiological contaminants, hazards, and microorganisms of public health significance.

Wi Qtr. 3 cl. Prereq: 636 or Fd Sc&Te 622 and Chem 123. Not open to students with credit for Fd Sc&Te 701 or 736. Cross-listed in Food Science and Technology.

**750<sup>^</sup> Fermentation Biotechnology U G 5**

Fundamentals of modern fermentation technology and industrial microbiology; with emphasis on product formation, culturing techniques and computer-controlled fermentation.

Sp Qtr. 3 cl, 2 3-hr labs. Prereq: 521; or equivs with permission of instructor.

**760<sup>^</sup> Advanced Bacterial Physiology U G 3**

Specialized metabolic pathways, regulation and control mechanisms, and bacterial biochemistry.

Sp Qtr. 3 cl. Prereq: 661 or permission of instructor.

**799 Microbiology Colloquium U G 1**

Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**832\*\* Advanced Cellular Immunology G 3**

Student presentations of primary literature with emphasis on genetic, biochemical, and cellular aspects of signal transduction by receptors of hematopoietic cells.

Wi Qtr. 3 cl. Prereq: 701 or permission of instructor.

**880 Seminar in Microbiology G 1-3**

Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2**

Students will present oral reports and lead discussion on research progress in specific areas of developmental biology.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Microbiology, Molecular Genetics, and Plant Biology. This course is graded S/U.

**893 Individual Studies G 3-5**

Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in Plan B master's program and written permission of instructor. Not open to Plan A MS candidates or PhD candidates. Repeatable to a maximum of 10 cr hrs. Outlined by instructor to meet individual student's needs for Plan B library research. This course is graded S/U.

**894 Group Studies G 2-5**

Group work on special topics in microbial or cellular biology.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**999 Research in Microbiology G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Military Science

**Army ROTC**

253 Converse Hall, 2121 Tuttle Park Place, 292-6075

The Department of Military Science offers instruction to all Ohio State students in basic soldier skills, leadership, organization of the Army and military history. Additionally, those individuals meeting the requirements as outlined by the Department of Defense may choose to receive a commission in the United States Army, the United States Army Reserve, or the Army National Guard.

Military Science 100- and 200-level courses are open to all students. Military Science 300- and 400-level courses are open to those students who meet the prerequisites as indicated below or receive the permission of the professor of military science. Students taking military science courses for credit and not seeking a commission will attend the classroom portion only. The Department of Military Science offers two programs of instruction leading to a commission as a Second Lieutenant.

The four-year program consists of a basic course and an advanced course. The basic course requires successful completion of Military Science 100- and 200-level courses during the freshman and sophomore years. The advanced course requires successful completion of Military Science 300- and 400-level courses during the junior and senior years. The courses are three credit hours for the basic program and four credit hours for the advanced program with three hours of classroom instruction. There are approximately 20 hours of leadership laboratory, in addition to the classroom instruction each quarter. Additionally, all advanced course students choosing to receive a commission in the United States Army, must attend a five-week summer training camp between their junior and senior years.

No military obligation is incurred for the first two years of the program. Following completion of the basic course, students may enter the advanced course of instruction. Those qualified students wishing to receive a commission must sign an ROTC contract which obligates the student to complete the program of instruction and accept a commission in the U.S. Army, U.S. Army Reserve, or the Army National Guard. Contracted students receive a subsistence allowance of \$200 for each academic month of enrollment, not to exceed \$2,000 per year.

The two-year program is offered for students wishing to receive a commission who transfer from colleges that did not offer ROTC, who are veterans, or students whose academic course load did not permit them to take military science courses during their first two years. Students may qualify for the two-year program in one of several ways. The first is by attending Army ROTC Basic Camp, Camp Challenge. Upon successful completion of camp, the student may enter the advanced course. Attending basic camp does not require the student to continue in the program nor does it incur any military obligation. The second is to receive credit for honorable prior military service of at least one year, as determined by the professor of military science. Additionally, a student may receive credit for two years or more of Junior ROTC at the high school level. After receiving credit for the basic course, the student proceeds with the advanced course as previously described.

**102 Military Survival Skills for the Small Unit Leader U 3**

An introduction to combat zone survival techniques; use of military survival kits as well as survival under varying climatic and battlefield conditions; includes a one day field training exercise.

Wi Qtr. 2 1-hr cl, 1 2-hr lab.

**103 Land Navigation and Map Reading U 3**

An introduction to basic military map reading and land navigation skills; conventional map reading skills as well as survival navigation skills for the hiker will be examined.

Sp Qtr. 2 1-hr cl, 1 2-hr leadership lab.

**111 Introduction to the US Army U 3**

An introduction to the US Army and the concept of leadership. Includes "whole life" skills applicable to school, business, or the Army.

Au, Wi, Sp Qtrs. 2 1-hr cl, 1 2-hr lab.

**212 Small Unit Actions U 3**

Study of selected small unit actions to define leadership in high stress environment and effects of battlefield dynamics.

Wi Qtr. 2 1-hr cl, 1 2-hr leadership lab. 1 required range exercise.

**213 Small Unit Leader U 3**

Instruction on advanced land navigation techniques, and tactics at the individual, squad, and platoon level; designed to prepare the student for the AROTC Advanced Program.

Au Qtr. 2 1-hr cl, 1 2-hr leadership lab. 1 2-day land navigation exercise.

**221 Basic Tactics and Soldier Skills U 3**

An introduction to the organization, mission, characteristics, capabilities, and tactics of the infantry squad, platoon, company, and battalion.

Sp Qtr. 2 1-hr cl, 1 2-hr lab.

**311 Contemporary Military Subjects U 4**

An overview of national defense policy, military history, organization, roles, missions, and branches of the U.S. Army, basic weaponry, and land navigation; designed as an orientation to the AROTC Advanced Program.

Wi Qtr. 3 cl, 2 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 2-day field training exercise. Prereq: MS 312 or permission of the professor of military science.

**312 Small Unit Tactics U 4**

Study of the organization, mission, characteristics, capabilities and tactics of the infantry squad, platoon, company, and battalion; troop leading procedures, operations orders, offensive, defense, retrograde operations, and patrolling.

Au Qtr. 3 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 4-day field training exercise. Prereq: Basic AROTC program or equiv.

**313 Military Leadership and Skills U 4**

A study of leadership to include trait theory, motivation theory, and contemporary leadership models; instruction on oral and written communication techniques, and basic military skill qualification subjects.

Sp Qtr. 3 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 4-day field training exercise. Prereq: 311 or permission of professor of military science.

**401 Military Operations, Management, and Ethics U 4**

Study of army management systems to include equipment management and property accountability; military professionalism and ethics (ethical decision-making process).

Au Qtr. 3 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 2-day field training exercise. Prereq: 311, 312, 313 or permission of professor of military science.

**402 Administration and Operations U 4**

Study of army administration, including military publications and personnel actions; army correspondence, including military writing style; small unit operations with concentration on platoon operations.

Wi Qtr. 3 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 4-day field training exercise. Prereq: 401 or permission of professor of military science.

**403 Military Justice and Officership U 4**

Study of military justice to include court system, disciplinary process, and legal obligations/restrictions.

Sp Qtr. 3 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 4-day field training exercise. Prereq: 402 or written permission of professor of military science.

## Modern Greek

414 University Hall, 230 North Oval Mall, 292-2744

### 101 Elementary Modern Greek I U 5

Elements of Modern Greek: sound and writing systems; phonology; morphology of noun and verb; written and oral practice.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of instructor. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

### 102 Elementary Modern Greek II U 5

Further study of morphology and syntax with reading of longer texts; extensive written and oral practice.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

### 103 Intermediate Modern Greek I U 5

Grammatical review, with attention to variations of morphology and syntax between Demotic and Katharevousa styles; prose reading assignments and written and oral practice.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

### 104 Intermediate Modern Greek II U 5

Assigned reading from Demotic and Katharevousa sources, including newspaper and periodical articles.

Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

### 241 Culture of Contemporary Greece U 5

A general survey of socio-cultural trends and issues in modern Greece through close analysis of literature and the other arts.

Wi, Sp Qtrs. 5 cl. Not open to students with credit for 341.

### 268 Folklore of Contemporary Greece U 5

A general survey of socio-cultural trends and issues in modern Greece through close examination of ethnographies and other folk expressions.

Sp Qtr.

### 293 Individual Studies U 1-3

Su, Au, Wi, Sp Qtrs. Prereq: 104 or equiv or permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

### 294 Group Studies U 1-5

Topics in Modern Greek studies.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 367 Issues in Greek-American Society and Culture U 5

Exploration of representative features of Greek-American culture and reflection on the social diversity in the United States.

Wi Qtr. 2 2-hr cl. Prereq: English 110 or 111 or equiv, and soph standing. GEC second writing and social diversity course.

### 371 Modern Greek Literature in Translation U 5

Review of the Modern Greek literary tradition of the last two centuries through representative works and from a theoretical perspective.

Sp Qtr. 2 2-hr cl. Prereq: Jr or sr standing. GEC arts and hums lit and third writing course.

### 401 Advanced Modern Greek I U 5

Extensive reading from literary prose, with practice in conversation and composition.

Wi Qtr. 5 cl. Prereq: 104.

### 402 Advanced Modern Greek II U 5

Reading from prose and poetry, with advanced practice in conversation and composition.

Sp Qtr. 5 cl. Prereq: 401.

### 628 Byzantine Greek Prose U G 5

Reading and analysis of prose texts representative of major developments and trends in Byzantine Greek writing from the 4th to the 15th century.

Au Qtr. 5 cl. Prereq: 402 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

### 651 Contemporary Greek Prose U G 5

Reading and analysis of short stories and novels representative of major developments and trends in Greek prose of the 19th and 20th centuries.

Wi Qtr. 5 cl. Prereq: 402.

### 652 Contemporary Greek Poetry U G 5

Reading and analysis of short and longer poems representative of major developments and trends in Greek poetry of the 19th and 20th centuries.

Sp Qtr. 5 cl. Prereq: 402.

### 693 Individual Studies U G 1-6

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

### 694 Group Studies U G 1-6

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

### 697 Study at a Foreign Institution U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

### 721 Studies in Modern Greek Literature U G 5

Advanced study of specific literary periods, figures, and/or topics, involving extensive reading and discussion of appropriate primary and secondary source materials.

Wi, Sp Qtrs. 4-5 cl. Prereq: 5 cr hrs of Modern Greek literature at the 600 level or equiv. Repeatable to a maximum of 15 cr hrs.

### H783 Honors Research U 3-5

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 811 Seminar in Modern Greek Studies G 5

Intensive, in-depth exploration of a selected topic or issue in Modern Greek literature, criticism, or intellectual culture.

Wi, Sp Qtrs. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 998 Research in Modern Greek G 1-10

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

## Molecular and Cellular Biochemistry

333 Hamilton Hall, 1645 Neil Avenue, 292-5451. Fax: 292-4118.

For instructors names see department at [www.med.ohio-state.edu](http://www.med.ohio-state.edu).

### 311 Fundamentals of Medical Biochemistry U 4

Basic structures and interactions of biomolecules in health and disease. Relevant organic chemistry included. Topics essential to human nutrition, dietetics, clinical chemistry, nursing, premedical education.

Au Qtr. 3 1.5-hr cl. Prereq: Chem 102 or 122.

### 312 Fundamentals of Medical Biochemistry and Molecular Biology U 4

A continuation of 311.

Wi Qtr. 3 1.5-hr cl. Prereq: 311.

### 641 Dental Biochemistry P 4

Chemistry and metabolism of carbohydrates, lipids, and proteins; digestion and absorption; elements of nutrition as they relate to dentistry, especially mineral and bone metabolism.

Au Qtr. 4 cl. Prereq: Chem 252 and enrollment in college of Dentistry.

### 642 Dental Biochemistry P 3

Continuation of 641.

Wi Qtr. 3 cl. Prereq: 641 and enrollment in College of Dentistry.

### 733 Human Genetics G 3

The principles of human genetics covering mapping of disease genes, defects causing human disease, the cloning of disease genes, gene therapy and transgenes.

Sp Qtr. 3 cl. and cptr time arr. Prereq: Mol Gen 500 or 501 or 606 or equiv. Not open to students with credit for Mol Gen 733 or Pathol 733. Cross-listed in Pathology and Mol Gen.

**761 Advanced Biochemistry: Proteins U G 3**

An advanced treatment of protein biochemistry.

Au Qtr. 3 cl. Prereq: Biochem 614 and Chem 253, 255 and 521; or equivs. Not open to students with credit for 705, Biochem 761, or Chem 761. Cross-listed in Biochemistry and Chemistry. Register under Chemistry.

**762 Advanced Biochemistry: Enzymes U G 3**

An advanced treatment of enzymology.

Au Qtr. 2 1.5-hr cl. Prereq: Biochem 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Biochem 705 or 762, or Chem 762. Cross-listed in Biochemistry and Chemistry.

**763 Advanced Biochemistry: Membranes and Bioenergetics U G 2**

An advanced treatment of membranes and bioenergetics.

Sp Qtr. 2 cl. Prereq: Biochem 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Biochem 705 or 763, or Chem 763. Cross-listed in Biochemistry and Chemistry. Register under Chemistry.

**764 Advanced Biochemistry: Integration of Metabolism U G 3**

An advanced treatment of the regulation and integration of mammalian biochemical systems.

Sp Qtr. 3 cl. Prereq: Chem 253, 255, 521 and Biochem 615 or equivs. Not open to students with credit for Biochem 764 or Chem 764. Cross-listed with Biochemistry and Chemistry.

**765 Advanced Biochemistry: Physical Biochemistry U G 2**

Diffusion, electrophoresis, sedimentation, light and x-ray scattering, x-ray and neutron diffraction, fluorescence, polarimetry, mass spectroscopy, and nuclear magnetic resonance.

Wi Qtr. 2 cl. Prereq: Chem 253, 255, 521 and Biochem 615; or equivs. Not open to students with credit for Biochem 765 or Chem 765. Cross-listed with Biochemistry and Chemistry. Register under Biochemistry.

**766 Advanced Biochemistry: Nucleic Acid Chemistry and Structure U G 2**

Reactions, synthesis, and conformations of nucleosides, nucleotides, oligonucleotides, and polynucleotides.

Sp Qtr. 2 cl. Prereq: Chem 253, 255, 521, and Biochem 615; or equivs. Not open to students with credit for Biochem 766 or Chem 766. Cross-listed with Biochemistry and Chemistry. Register under Biochemistry or Chemistry.

**781 Animal Models of Human Disease U P G 1**

Transgenic and knockout mouse technology and examples of models for genetic diseases with each pattern of inheritance.

Wi Qtr. 1 cl. Prereq: Mol Gen 701 or IBGP 701. Cross-listed in Integrated Biomedical Science.

**793 Individual Studies U P G 2-16**

Qualified students can conduct a minor investigation under the direction of a faculty member.

Su, Au, Wi, Sp Qtrs. Prereq: A previous biochemistry course and permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

**823\* Molecular Control Mechanisms of Cell Proliferation G 3**

Molecular mechanisms of cell proliferation under nuclear and cytoplasmic control. Emphasis will be directed towards understanding cyclins, nucleosome positioning, and cis and trans activity elements.

Wi Qtr. 2 1.5-hr cl. Prereq: 1 yr of grad biochem or permission of instructor.

**824\*\* Enzymology G 3**

Selected topics in structure/function relationships, mechanisms of catalysis, kinetics, and metabolic interrelations of enzyme systems.

Sp Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

**827\*\* Biochemical Mechanisms of Carcinogenesis G 3**

Defines the multi-stage model of cancer, signal transduction pathways used by tumor cells, genetics of cancer susceptibility and gene mutations in tumors.

Sp Qtr. 2 1.5-hr cl. Prereq: 1 yr of grad biochem or permission of instructor. Not open to students with credit for MVIMG 827 or Med Micr 827. Cross-listed in Molecular Virology, Immunology and Medical Genetics.

**831 Eukaryotic Genome: Structure and Expression G 3**

Current research on the structure and expression of genes in higher eukaryotes.

Wi Qtr. 3 cl. Prereq: Biochem 702 or equiv. Not open to students with credit for Biochem 781. Repeatable to a maximum of 6 cr hrs. Cross-listed in Biochemistry and Molecular Genetics.

**850 Seminar G 1-2**

Prereq or concur: One yr of biochem. Repeatable. This course is graded S/U.

**999 Research G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Molecular Genetics

984 Biological Sciences Building, 484 West 12th Avenue, 292-8084

Genetics of Animal Populations

See Animi Sc 720.01 and 720.02.

Current Topics in Animal Genetics

See Animi Sc 820.

**140 Introduction to Genetics U 5**

An introductory course emphasizing applied aspects of genetics, primarily for students outside the College of Biological Sciences.

Sp Qtr. 5 cl. Prereq: Biology 101 or 113 or H115. Not open to students with credit for 170 or 201. NS Admis Cond course.

**500 General Genetics U G 5**

The principles of genetics, including molecular genetics, transmission genetics of prokaryotes and eukaryotes, developmental and non-chromosomal genetics, and the genetics and evolution of populations.

Su, Au, Wi, Sp Qtrs. 3 1.5-hr cl. Prereq: Biology 101 or 113 or H115, plus 5 additional cr hrs in biological sciences, and Chem 232 or 252.

**503 Tutorial in Molecular Genetics U 2**

Practice in searching, reading, and analyzing literature in molecular genetics, and in written and oral presentation.

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: 502. Open to mol gen majors only or by permission of instructor. GEC third writing course.

**601 Eukaryotic Molecular Genetics Laboratory U G 5**

Current laboratory techniques used in the genetic and molecular analyses of *Saccharomyces cerevisiae* and *Drosophila*.

Wi Qtr. 1 cl, 3 3-hr labs. Prereq: Biochem 511 or permission of instructor.

**602 Eukaryotic Cell and Developmental Biology Laboratory U G 5**

Laboratory course emphasizing recent advances in techniques and methods central to cell biology and developmental biology of eukaryotes.

Sp Qtr. 2 cl, 2 4-hr labs. Prereq: Biochem 511 or permission of instructor.

**605 Molecular Genetics I U G 3**

Hereditary information as sequence information; DNA replication, transcription, and translation; analysis and manipulation of genes at the molecular level; asexual, sexual reproduction in eukaryotes.

Wi Qtr. 3 1-hr cl. Prereq: Biochem 511 and Math 152. Not open to students with credit for 500.

**606 Molecular Genetics II U G 3**

Sexual reproduction in prokaryotes, viruses and organelles; molecular mechanisms of DNA replication, repair, mutation, recombination, and expression; genome structure; molecular evolution.

Sp Qtr. 3 1-hr cl. Prereq: 605. Not open to students with credit for 500.

**607 Cell Biology U G 3**

Analysis of the structure and function of cells and their components stressing molecular genetic and biochemical approaches.

Au Qtr. 3 1-hr cl. Prereq: 500 or 606. Not open to students with credit for 502.

**608 Genes and Development U G 3**

Analysis of development using modern genetic approaches.

Wi Qtr. 3 1-hr cl. Prereq: 500 or 606. Not open to students with credit for 502.

**622 Plant Molecular Biology U G 4**

An in-depth survey of molecular biology of plants with emphasis on current research topics.

Wi Qtr. 3 cl, 12-hr discussion. Prereq: 500 or 501, and Biochem 511; or 605; or permission of instructor. Not open to students with credit for 632 or Plant Bio 622. Cross-listed in Plant Biology.

**640 The Genetical Basis of Evolution U G 5**

The modern theory of evolution and its underlying genetic basis.

Sp Qtr. 3 1.5-hr cl. Prereq: 500.

**650 Analysis and Interpretation of Biological Data I U G 5**

Methods of analyzing biological data including: sampling, descriptive statistics, distributions, group comparisons, statistical inference, one-way and nested analysis of variance and linear regression and correlation.

Au, Wi, Sp Qtrs. 1 2-hr lab, 4 cl (optional after 1st wk), 3-5 hrs.

**693 Individual Studies**

Individual work in the field of the chosen problems.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 35 cr hrs. This course is graded S/U.



**700 Systems of Genetic Analysis U G 3**

Analysis of several major systems used in modern experimental genetics.  
Au Qtr. 3 1-hr cl. Prereq: 501 or 606 or equiv.

**701 Molecular Genetics: DNA Transactions U G 3**

Survey of experimental methods of molecular genetics and their application to the elucidation of pathways of DNA replication, mutation, repair, and recombination.

Au Qtr. 3 cl. Prereq: 500 or 606, 501 or Biochem 511 or equiv; and 10 additional cr hrs in the bio sci above the 300 level.

**705 Advances in Cell Biology U G 3**

An advanced study of selected key areas of research in eukaryotic cell biology.

Wi Qtr. 3 1-hr cl. Prereq: 607 and 701 or equiv.

**711\*\* Molecular Evolution U G 3**

Evolution and population genetics as seen at the molecular level: phenomena, concepts, methods of study, and implications for molecular biology and other disciplines.

Wi Qtr. 3 cl. Prereq: 500 or 501 or 606, and 640 or 701 or EEOB 400 or Plnt Bio 613 or Zoology 420; or equivs or permission of instructor.

**715 Developmental Genetics U G 3**

A study of the regulation of developmentally significant genes and cellular interactions involved in differentiation and pattern formation in Drosophila and metazoans.

Sp Qtr. 3 1-hr cl. Prereq: 608, 700, and 701 or equiv.

**733 Human Genetics U G 3**

The principles of human genetics covering mapping of disease genes, defects causing human disease, the cloning of disease genes, gene therapy and transgenes.

Sp Qtr. 3 cl. Prereq: 500 or 501 or 606 or equiv. Not open to students with credit for M Biochem 733 or Pathol 733. Cross-listed in M Biochem and Pathol.

**770\*\* Molecular Biology of Animal and Plant Viruses U G 3**

An advanced virology course using selected animal and plant.

Sp Qtr. 3 cl. Prereq: Biochem 702 or equiv with permission of instructor.

**H783 Honors Research U 3-5**

A program of reading and research for each student with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA or BS with distinction in mol gen. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**795 Special Topics in Molecular Genetics U G 2**

Lecture/discussion in a seminar format of publications; current research or research techniques in molecular genetics, cell biology, or developmental biology.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: 500 and permission of instructor. Repeatable to a maximum of 56 cr hrs. This course is graded S/U.

**800 Genetic Seminar G 1-3**

Faculty, graduate students, and outside speakers will participate.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**801 Research Opportunities in Molecular Genetics G 2**

Discussion of research projects being carried out in laboratories of the department.

Au Qtr. 1 2-hr cl. Prereq: Grad standing in mol gen. This course is graded S/U. This course is graded S/U.

**804 Molecular Genetics Laboratory Rotations G 3**

Laboratory research procedures, literature readings, and discussions to familiarize the students with a specific research area.

Su, Au, Wi, Sp Qtrs. Arr lab. Prereq: Grad standing in mol gen. Repeatable to a maximum of 9 cr hrs. Required of all 1st yr molecular genetics grad students. This course is graded S/U.

**811\* Advanced Topics in Molecular Genetics G 3**

An examination of the current research in molecular genetics by selective reading assignments and critical analysis during class discussion periods.

Wi Qtr. 3 cl. Prereq: 611 or 701, or Biochem 611 or 702. Repeatable to a maximum of 6 cr hrs. Including cr hrs earned in Biochem 811. Cross-listed in Biochemistry.

**831 Eukaryotic Genome: Structure and Expression G 3**

Current research on the structure and expression of genes in higher eukaryotes.

Wi Qtr. 3 cl. Prereq: Biochem 702 or equiv. Not open to students with credit for Biochem 781, or Biochem 781 or 831, or M Biochem 831. Cross-listed in Biochemistry and Medical Biochemistry.

**880 Research Seminars**

Intensive study of problems in graduate fields of specialization.

Su, Au, Wi, Sp Qtrs. Prereq: 10 grad cr hrs or permission of instructor.

**880.01 Developmental Genetics G 1-3**

Repeatable to a maximum of 30 cr hrs.

**880.02 Cell Biology G 1-3**

Repeatable to a maximum of 30 cr hrs.

**880.03 Molecular Evolution/Population Genetics G 1-3**

Repeatable to a maximum of 30 cr hrs.

**880.04 Viral Genetics G 1-3**

Repeatable to a maximum of 30 cr hrs.

**880.05 DNA Replication, Recombination, Repair G 1-3**

Repeatable to a maximum of 30 cr hrs.

**880.06 Gene Expression: Transcriptional Control G 1-3**

Repeatable to a maximum of 30 cr hrs.

**880.07 Gene Expression: Post-Transcriptional Control G 1-3**

Repeatable to a maximum of 30 cr hrs.

**880.08 Yeast Molecular Biology G 1-3**

Repeatable to a maximum of 30 cr hrs.

**880.10 Human Genetics G 1-3**

Repeatable to a maximum of 30 cr hrs.

**880.11 Transgenic Models G 1-3**

Repeatable to a maximum of 30 cr hrs.

**890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2**

Students will present oral reports and lead discussion on research progress in specific areas of developmental biology.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Microbiology, Molecular Genetics, and Plant Biology.

**999 Research in Genetics G 1-18**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable. This course is graded S/U.

## Molecular Virology, Immunology and Medical Genetics

2078 Graves Hall, 333 West 10th Avenue, 292-5525

**600 Evolution of Emerging Viruses U G 2**

Biochemical, molecular, cellular, clinical, and epidemiological aspects of emerging viruses, with an emphasis on how each plays a role in virus evolution and emergence.

Sp Qtr. 1 2-hr cl. Prereq: 2 yrs of course work in the biological sciences recommended. Not open to students with credit for Med Micr 600.

**625 Medical Microbiology P G 5**

Basic principles of Medical Microbiology with direct application to infections of man.

Au Qtr. 40-hr lec. Not open to students with credit for Med Micr 625.

**626 Medical Microbiology P G 5**

A more extensive and intensive application of basic principles of medical microbiology to infectious diseases.

Wi Qtr. 9-hr lec, 25-hr discussion. Prereq: 625 or Med Micr 625 or permission of instructor. Not open to students with credit for Med Micr 626.

**647 Eukaryotic Pathogens U G 3**

Pathogenesis virulence factors, host-parasite interactions, ecology, epidemiology, immunity, laboratory diagnosis, and chemotherapy of eucaryotic pathogens.

Au Qtr. 2 1.5-hr cl. Prereq: Micrbiol 520 or 524, or Biochem 511, or Mol Gen 500 or 501, or permission of instructor. Not open to students with credit for Micrbiol 647. Cross-listed in Microbiology.

**693 Individual Studies G 1-5**

Individual minor investigation in the field of virology, immunology, microbial pathogenesis or cancer genetics.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Group Studies on special topics in virology, immunology, microbial pathogenesis or cancer genetics.

Su, Au, Wi, Sp Qtrs. Arr Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**701 Cellular and Molecular Immunology U G 5**

Cellular and molecular mechanisms of immune response, cell recognition and communication, molecular biology of cell recognition structures, cytokines, and effector mechanisms.

Au Qtr. 5 cl. Prereq: Biochem 613, Mol Gen 501, or equiv. Not open to students with credit for Med Micr 701 or Microbiol 701. Cross-listed in Microbiology.

**727 Epidemiologic Methods for Medical Genetics G 3**

An introduction to the study of genetic influences in disease, with an emphasis on study design and statistical methods.

Sp Qtr. Prereq: Grad standing or permission of instructor.

**734 Human Cancer Genetics U P G 5**

An introduction to the understanding of the genetic background of sporadic and hereditary cancers, as well as the latest methods used to study human cancer.

Au Qtr. Prereq: Biochem 511 or equiv. Required for all MVIMG students in the Human and Cancer Genetics research track. Cross-listed in Molecular Genetics.

**747\* Molecular Biology of Eucaryotic Microbial Pathogens G 3**

Antigenic variation, composition of non-mammalian surfaces, responses to environmental signals, mechanisms leading to damage and survival within the host; emphasis on yeast and parasitic protozoa.

Sp Qtr. 2 1.5-hr cl. Prereq: Biochem 702. Not open to students with credit for Med Micr 747.

**750\* Principles of Neuroimmunology U P G 3**

Research and clinical applications of inflammatory processes within the central nervous system with special emphasis on neurodegenerative disorders, autoimmune disease and neurotrauma (e.g., spinal injury).

Sp Qtr. 2 1.5-hr cl. Prereq: 701 or Med Micr 701, Neuro Sc 725 or Neurosci 725 or NeuroGSP 725 or equiv, or permission of instructor.

**754\* Fundamentals of Molecular Virology P G 5**

Primary emphasis is on molecular biology of animal/human viruses. Covers the strategy of virus replication with special emphasis on the molecular biology of genomic replication and virus gene expression.

Sp Qtr. 3 1-hr cl. Prereq: Mol Gen 701, Biochem 702 or equiv. Not open to students with credit for Med Micr 754.

**757\* Diagnostic and Clinical Virology P G 5**

Laboratory procedures used for the diagnosis of human viral infections.

Sp Qtr. 1 cl, 3 3-hr lab. Prereq: Enrollment in College of Medicine or written permission of instructor. Not open to students with credit for Med Micr 757.

**764\* Bacterial Viruses P G 3**

Molecular biological study of bacteriophages emphasizing virulent and lysogenic phage host systems.

Sp Qtr. 2 1.5-hr cl. Prereq: Mol Gen 701, Biochem 702, or permission of instructor. Not open to students with credit for Med Micr 764.

**793.01 Student Seminar in Molecular Virology, Immunology, and Medical Genetics G 3**

Student presentations and evaluations of graduate research.

Sp Qtr. 3 cl. Repeatable to a maximum of 15 cr hrs. Required in years 2-5 of MVIMG graduate enrollment. This course is graded S/U.

**793.06 Problems in Molecular Virology, Immunology and Medical Genetics P G 3-15,18**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs. 1, 2, 3, or 4 months; offered all months (prof cr). This course is graded S/U.

**793.07 Diagnostic and Clinical Microbiology P G 6-18**

Su, Au, Wi, Sp Qtrs. Prereq: 626 or Med Micr 626 and permission of instructor. Repeatable to a maximum of 24 cr hrs. Experience in isolation and identification of micro-organisms from clinical specimens. 1, 2, 3, or 4 months (full time-prof cr). This course is graded S/U.

**794 Group Studies G 1-18**

One month, offered all months (prof cr.).

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable. When registration is for 3 professional cr hrs, an additional 3 cr hr professional course must be taken. This course is graded S/U.

**801\*\* Selected Topics in Advanced Immunology G 3**

Specific topics will vary from year to year in the general areas of neuroimmunology, molecular immunology, immune regulation, and cellular immunity.

Wi Qtr. 3 cl. Prereq: 701 or Med Micr 701 or equiv course in basic immunology or permission of instructor. Repeatable to a maximum of 9 cr hrs. Intended for advanced grad students, medical residents, and postdoctoral fellows.

**804\*\* Instrumentation and Techniques in Molecular Virology, Immunology, and Cancer Genetics. G 5**

Theory and application of techniques used to purify and characterize nucleic acids, lipids, and proteins; theory and operation of equipment and instruments used.

Wi Qtr. 2 2-hr cl, 12 lab hrs. Prereq: 625, 626 or Med Micr 625, 626; and MBiochem 611, 612, or equiv; and written permission of instructor. Not open to students with Med Micr 804.

**814 Current Topics in Molecular Virology, Immunology and Medical Genetics**

Discussion of current literature in various topics of molecular virology, immunology, and medical genetics.

Au, Wi, Sp Qtrs. 1 cl. May count toward MMI 814 requirement (3 credits). Meets once per week for student discussions of journal articles in a journal club format.

**814.01 Current Topics Molecular Virology G 1**

Discussion of current literature in the field of molecular virology.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in program or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**814.02 Current Topics Immunology G 1**

Discussion of current literature in the field of immunology.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in program or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**814.03 Current Topics Human Genetics G 1**

Discussion of current literature in the field of human genetics.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in program or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**814.04 Current Topics in Microbial Pathogenesis G 1**

Discussion of current literature in the field of microbial pathogenesis.

Wi Qtr. 1 cl. Prereq: Grad standing in program or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**814.05 Current Topics in Research Ethics G 1**

Discussion of current literature in the field of research ethics.

Wi Qtr. 1 cl. Prereq: Grad standing in program or permission of instructor. Repeatable to a maximum of 3 cr hrs. 1 credit of this subdivision required for PhD or MS. Meets once per week for student presentations of case studies and presentations by instructor. This course is graded S/U.

**827\* Biochemical Mechanisms of Carcinogenesis G 3**

Defines the multi-stage model of cancer, signal transduction pathways used by tumor cells, genetics of cancer susceptibility and gene mutations in tumors.

Sp Qtr. 2 1.5-hr cl. Prereq: 1 yr of grad biochem or permission of instructor. Not open to students with credit for Med Micr 827 or Molbioch 827. Cross-listed in Molecular and Cellular Biochemistry.

**833\* Current Immunological Techniques G 4**

Current techniques in cellular and humoral immunology as applicable in research conducted by students.

Wi Qtr. 2 4-hr labs. Prereq: 701 or Med Micr 701 or equiv course in basic immunology. Not open to students with credit for Med Micr 833 or Microbiol 833. Cross-listed in Microbiology.

**841\* Viral Pathogenesis and Oncogenesis G 5**

Cellular, immunological and molecular mechanisms involved with virus pathogenesis in animals/humans.

Au Qtr. 5 cl. Prereq: 701 or Med Micr 701 or equiv and 754 or Med Micr 754. Not open to students with credit for Med Micr 841 or Vet Bios 841 or Vet Path 841. Cross-listed in Veterinary Biosciences.

**847\* Cellular Mechanisms and Pathogenesis of Inflammation G 3**

Inflammatory processes in the human host due to interaction with viruses, bacteria, parasites, foreign antigens, or physical trauma and new immunological therapeutic strategies being developed.

Wi Qtr. Prereq: 701 or Med Micr 701 or Microbiol 701. Not open to students with credit for Med Micr 847.

**850 Advanced Seminar in Molecular Virology, Immunology and Medical Genetics G 1**

Advanced seminar in which students will summarize their research papers.

Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**874\* Advanced Topics in Molecular Biology of Eukaryotes G 3**

Current information on structure and function of two aspects of molecular biology of eukaryotes; emphasis on experimental rationale and techniques.

1 2.5-hr cl. Prereq: Biochem/Genetics 611, or Biochem 709, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**999 Research in Molecular Virology, Immunology and Medical Genetics G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in mvimg. Repeatable. This course is graded S/U.

**Molecular, Cellular, and Developmental Biology**

206 Rightmire Hall, 1060 Carmack Road, 292-2804

**693 Individual Studies G 2-15**

Individual research and problem solving in the field of molecular, cellular, and developmental biology.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 35 cr hrs. This course is graded S/U.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**800 Seminar in Molecular, Cellular, and Developmental Biology G 1**

Seminars will be presented by faculty, graduate students, and outside speakers.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2**

Students will present oral reports and lead discussion on research progress in specific areas of molecular, cellular, and developmental biology.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**999 Research in Molecular, Cellular, and Developmental Biology G 1-18**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Music**

110 Weigel Hall, 1866 College Road, 292-6571

Preceding the class sessions of Music 221 and Music 201, placement tests will be given to determine the ability of students in these subjects. Contact the School of Music for details.

Art and Music since 1945

See Art Educ 160.

**101 Applied Music for Nonmajors Group Instruction I**

Au, Wi, Sp Qtrs. 2 cl. Open only to non-music majors. VPA Admis Cond courses.

101.01 Piano U 2

101.02 Voice U 2

Repeatable to a maximum of 4 cr hrs.

**102 Applied Music for Non-majors Group Instruction II**

Wi, Sp Qtrs. 2 cl. Open only to non-music majors. VPA Admis Cond courses.

102.01 Piano U 2

102.02^\* Voice U 2

Prereq: 101.02.

**105 Athletic Band U 1**

Athletic band provides spirited music for various sporting events (men's and women's basketball, spring football game), as well as several concerts.

Open to all students with prior high school instrumental experience, no formal audition required. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 188.05. Some instruments may be available if needed. VPA Admis Cond course.

**110 Applied Music (Prospective Music Majors)**

An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201.

Au, Wi, Sp Qtrs. 1.5-hr cl, studio cl and recital attendance arr. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major.

110.11 Piano U 2

Repeatable to a maximum of 4 cr hrs.

110.12 Jazz Piano U 2

Repeatable to a maximum of 4 cr hrs.

110.21 Voice U 2

Repeatable to a maximum of 4 cr hrs.

110.31 Violin U 2

Repeatable to a maximum of 4 cr hrs.

110.32 Viola U 2

Repeatable to a maximum of 4 cr hrs.

110.33 Cello U 2

Repeatable to a maximum of 4 cr hrs.

110.34 Double Bass U 2

Repeatable to a maximum of 4 cr hrs.

110.35 Guitar U 2

Repeatable to a maximum of 4 cr hrs.

110.36 Jazz Bass U 2

Repeatable to a maximum of 4 cr hrs.

110.41 Flute U 2

Repeatable to a maximum of 4 cr hrs.

110.42 Oboe U 2

Repeatable to a maximum of 4 cr hrs.

110.43 Clarinet U 2

Repeatable to a maximum of 4 cr hrs.

110.44 Bass Clarinet U 2

Repeatable to a maximum of 4 cr hrs.

110.45 Saxophone U 2

Repeatable to a maximum of 4 cr hrs.

110.46 Bassoon U 2

Repeatable to a maximum of 4 cr hrs.

110.47 Jazz Saxophone U 2

Repeatable to a maximum of 4 cr hrs.

110.51 Horn U 2

Repeatable to a maximum of 4 cr hrs.

110.52 Trumpet U 2

Repeatable to a maximum of 4 cr hrs.

110.53 Trombone U 2

Repeatable to a maximum of 4 cr hrs.

110.54 Euphonium U 2

Repeatable to a maximum of 4 cr hrs.

110.55 Tuba U 2

Repeatable to a maximum of 4 cr hrs.

110.56 Jazz Trumpet U 2

Repeatable to a maximum of 4 cr hrs.

110.57 Jazz Trombone U 2

Repeatable to a maximum of 4 cr hrs.

110.71 Percussion U 2

Repeatable to a maximum of 4 cr hrs.

110.72 Jazz percussion U 2

Repeatable to a maximum of 4 cr hrs.

110.91 Harp U 2

Repeatable to a maximum of 4 cr hrs.

**121 Elementary Music Theory and Aural Training U 5**

An introduction to the fundamentals of music, music reading, and aural musicianship.

Au Qtr. 5 cl. Not open for credit to music majors. May not be substituted for 270. VPA Admis Cond course.

**140 Music Cultures of the World U 5**

A survey of musical cultures outside the Western European tradition of the fine arts.

Su, Au, Wi, Sp Qtrs. 3 cl, 2 1-hr lab. GEC arts and hums VPA course. VPA Admis Cond course.

**141 Introduction to Music U 5**

A consideration of the materials of music and important styles, forms, and composers from the Baroque to the present.

Su, Au, Wi, Sp Qtrs. 5 cl. H141 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open for credit to music majors. H141: Sp Qtr (offered on the regional campuses only). A musical background is not required. GEC arts and hums VPA course. VPA Admis Cond course.

**142 American Popular Music U 5**

Historical survey of American popular music, with emphasis on the twentieth century.

Su Qtr. 5 2-hr cl. GEC arts and hums VPA course.

**150 Introduction to Jazz U 5**

A study of the characteristics, styles, and structure of jazz; jazz performers.

Sp Qtr. 5 cl. Not open for credit to music majors. GEC arts and hums vpa course. VPA Admis Cond course.

**200 Applied Music (Secondary)**

Fundamental applied music instruction in areas other than a student's major or principal area.

Au, Wi, Sp Qtrs. .5-hr lesson with 1-cr registration; 1-hr lesson with 2-cr registration. Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music.

**200.11 Piano U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.12 Jazz Piano U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.21 Voice U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.31 Violin U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.32 Viola U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.33 Cello U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.34 Double Bass U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.35 Guitar U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.36 Jazz Bass U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.37 Jazz Guitar U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.41 Flute U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.42 Oboe U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.43 Clarinet U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.44 Bass Clarinet U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.45 Saxophone U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.46 Bassoon U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.47 Jazz Saxophone U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.51 Horn U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.52 Trumpet U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.53 Trombone U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.54 Euphonium U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.55 Tuba U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.56 Jazz Trumpet U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.57 Jazz Trombone U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.71 Percussion U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.72 Jazz Percussion U 1-2**

Repeatable to a maximum of 12 cr hrs.

**200.91 Harp U 1-2**

Repeatable to a maximum of 12 cr hrs.

**201 Applied Music (Principal)**

Instruction in applied music to develop musicianship; performance, and a wide reading knowledge of music literature.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl and recital attendance arr. Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. These courses are available for EM credit.

**201.11 Piano U 2**

Repeatable to a maximum of 8 cr hrs.

**201.12 Jazz Piano U 2**

Repeatable to a maximum of 8 cr hrs.

**201.21 Voice U 2**

Repeatable to a maximum of 8 cr hrs.

**201.31 Violin U 2**

Repeatable to a maximum of 8 cr hrs.

**201.32 Viola U 2**

Repeatable to a maximum of 8 cr hrs.

**201.33 Cello U 2**

Repeatable to a maximum of 8 cr hrs.

**201.34 Double Bass U 2**

Repeatable to a maximum of 8 cr hrs.

**201.36 Jazz Bass U 2**

Repeatable to a maximum of 8 cr hrs.

**201.37 Jazz Guitar U 2**

Repeatable to a maximum of 8 cr hrs.

**201.41 Flute U 2**

Repeatable to a maximum of 8 cr hrs.

**201.42 Oboe U 2**

Repeatable to a maximum of 8 cr hrs.

**201.43 Clarinet U 2**

Repeatable to a maximum of 8 cr hrs.

**201.44 Bass Clarinet U 2**

Repeatable to a maximum of 8 cr hrs.

**201.45 Saxophone U 2**

Repeatable to a maximum of 8 cr hrs.

**201.46 Bassoon U 2**

Repeatable to a maximum of 8 cr hrs.

**201.47 Jazz Saxophone U 2**

Repeatable to a maximum of 8 cr hrs.

**201.51 Horn U 2**

Repeatable to a maximum of 8 cr hrs.

**201.52 Trumpet U 2**

Repeatable to a maximum of 8 cr hrs.

**201.53 Trombone U 2**

Repeatable to a maximum of 8 cr hrs.

**201.54 Euphonium U 2**

Repeatable to a maximum of 8 cr hrs.

**201.55 Tuba U 2**

Repeatable to a maximum of 8 cr hrs.

**201.56 Jazz Trumpet U 2**

Repeatable to a maximum of 8 cr hrs.

**201.57 Jazz Trombone U 2**

Repeatable to a maximum of 8 cr hrs.

**201.71 Percussion U 2**

Repeatable to a maximum of 8 cr hrs.

**201.72 Jazz Percussion U 2**

Repeatable to a maximum of 8 cr hrs.

**201.91 Harp U 2**

Repeatable to a maximum of 8 cr hrs.

**202 Sightreading for Pianists U 1**

Developing tactile and visual skills at the keyboard, ensemble sight-reading duets, two-piano scores, vocal and instrumental accompanying, transposition, and figured bass realization.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Performance major with specialization in piano. Repeatable to a maximum of 4 cr hrs.

**203 University Choirs**

Au, Wi, Sp Qtrs.

**203.01 Chorale U 1**

A selected group of mixed voices which performs an extensive repertoire in concerts both on and off campus.

6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 191. VPA Admis Cond course.

**203.02 Symphonic Choir U 1**

Symphonic Choir is a concert organization singing a variety of literature. 6 or more hrs rehearsal each wk. Prereq: Admission by audition only. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 181. VPA Admis Cond course.

**203.03 University Chorus U 1**

Oratorio and large choral works are studied and performed.

3 or more hrs rehearsal each wk. Prereq: Admission by audition only. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 180. VPA Admis Cond course.

**203.04 Men's Glee Club U 1**

Study and performance of choral literature for men's voices.

3 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 183. Membership in this concert group is open to all men students in the University by audition only.

**203.05 Women's Glee Club U 1**

Study and performance of choral literature for women's voices.

3 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 182. Membership in this concert group is open to all women students in the University by audition. VPA Admis Cond course.

**204 University Bands**

Au, Wi, Sp Qtrs. VPA Admis Cond courses.

**204.01 University Wind Ensemble U 1**

A select group of wind and percussion performers who prepare and perform wind literature from the 18th through the 20th century.

Prereq: Admission by audition and permission of conductor. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 188.01.

**204.02 University Concert Band U 1**

Preparation and performance of traditional and contemporary literature for symphonic band.

Open to all students by audition and permission of conductor. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 188.02.

**204.03 University Symphonic Band U 1**

Preparation and performance of traditional and contemporary literature for symphonic band.

Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 188.03. Open to all students by audition and permission of conductor.

**204.04 University Band U 1**

Offers the nonmusic major an opportunity to enjoy creating music with limited performance demands.

Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 188.04. Open to all students with prior high school instrumental experience; no formal audition required. Instruments available if needed.

**205 University Marching Band U 2**

The University Marching Band is a selected group of brass and percussion players which performs at football games and rallies during Autumn Quarter.

Au Qtr. 6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in 186. No audit. VPA Admis Cond course.

**206 Jazz Ensembles**

VPA Admis Cond courses.

**206.01 University U 1**

A selected group devoted to playing, arranging, and rehearsing with emphasis on contemporary jazz literature.

Au, Wi, Sp Qtrs. 4 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 196.01.

**206.02 Laboratory U 1**

A selected group devoted to the study and performance of music in various styles of jazz.

Au, Wi, Sp Qtrs. 3 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 196.02.

**206.03 Workshop U 1**

A selected group devoted to the study and performance of music in various jazz, jazz rock, blues, and pop styles.

Wi, Sp Qtrs. 3 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 196.03.

**207 Percussion Ensembles**

Au, Wi, Sp Qtrs.

**207.01 University Percussion Ensemble U 1**

A laboratory and performance musical ensemble whose literature consists of original and transcribed works for percussion instruments alone or with percussion as a dominant feature.

2 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 195. VPA Admis Cond course.

**207.02 Steel Pan Ensemble U 1**

A laboratory and performance experience on authentic steel pans, concentrating on traditional musics of Trinidad, as well as contemporary arrangement.

Wi, Sp Qtrs. 2 1.5-hr rehearsals. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 192.

**208 Small Ensembles**

Au, Wi, Sp Qtrs. 2 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. VPA Admis Cond courses.

**208.01 Piano U 1**

Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.01.

**208.02 Voice U 1**

Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.02.

**208.03 Strings U 1**

Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.03.

**208.04 Woodwinds U 1**

Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.04.

**208.05 Brass U 1**

Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.05.

**208.07 Percussion U 1**

Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.07.

**208.15 Early Music Ensemble U 1**

Au, Wi Qtrs. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.15.

**208.20 African Performing Ensemble U 1**

Au, Wi Qtrs. 1 2-hr cl. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.20, and AfAm&ASt 199.20 and 208.20. Cross-listed in African-American and African Studies.

**208.21 Slavic Performing Ensemble U 1**

Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.21.

**208.40 Jazz Combos U 1**

Small groups devoted to the study and performance of music in the various jazz combo styles.

3 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 196.04.

**208.99 Miscellaneous U 1**

Repeatable to a maximum of 18 cr hrs. Including cr hrs earned in 199.10.

**209 Jazz Improvisation I U 3**

Fundamentals of jazz improvisation; seventh chord structures major, minor, pentatonic and blues scales; jazz patterns and phrasing; analysis and improvisation of blues and II-V progressions.

Wi Qtr. 3 cl. Prereq: 221. This course is available for EM credit.

**210 Jazz Improvisation II U 3**

Improvisation techniques utilizing blues and pentatonic scales, elaboration of seventh chord structures; analysis of transcribed solos; improvisation of vertical, horizontal, and combination tunes; exploration of Bebop and post-bop literature.

Sp Qtr. 3 cl. Prereq: 209. This course is available for EM credit.

**211 Jazz Improvisation III U 3**

Continuation of 210; technique development utilizing fourth patterns; concepts in modal and linear improvisations; increasing emphasis on post-bop literature; extensive practice in playing changes of bebop tunes.

Au Qtr. 3 cl. Prereq: 210.

**212 Introduction to Phonetic Alphabet U 2**

Introduction to the International Phonetic Alphabet and its application to singing in foreign languages.

Wi Qtr. 3 cl. Prereq: Minimum of 2 cr hrs of applied study in voice or written permission of instructor.

**215 University Orchestra**

Au, Wi, Sp Qtrs.

**215.01 University Symphony Orchestra U 1**

The University Orchestra is an 85-piece orchestra of full instrumentation devoted to the preparation of standard and modern literature; the group gives at least three concerts each year.

6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 18 cr hrs. Membership is open to all University students by audition. VPA Admis Cond course.

**220 Introduction to Music Technology U 3**

Introduction to the use of technology in the practice and study of music.

Au, Wi Qtrs. 3 cl. Prereq: Passing placement tests. Open only to music majors.

**221 Music Theory I U 3**

Elements of music and musical notation; analytical concepts and terminology; fundamentals of harmony, part-writing, and melody; extensive practice through written drill and creative projects.

Au, Wi Qtrs. 3 cl. Prereq: Passing of placement tests. This course is available for EM credit.

**222 Music Theory II U 3**

Principles of diatonic harmony, nonchordal melodic elements, and homophonic phrase structures; extensive practice in part-writing, analysis, and creative application.

Wi, Sp Qtrs. 3 cl. Prereq: 221. This course is available for EM credit.

**223 Music Theory III U 3**

Continuation of 222, including diatonic modulation and secondary dominant functions (emphasis on creative projects).

Su, Sp Qtrs. 3 cl. Prereq: 222. This course is available for EM credit.

**225 Aural Training I U 2**

Training in aural musicianship and music reading; practical application through solfege, dictation, and keyboard drill.

Wi, Sp Qtrs. 4 lab hrs. Prereq: 220. This course is available for EM credit.

**226 Aural Training II U 2**

A continuation of 225, with attention to harmonic, contrapuntal, and rhythmic problems.

Su, Sp Qtrs. 4 lab hrs. Prereq: 225. This course is available for EM credit.

**231 Jazz Theory U 2**

The forms and compositional techniques of jazz, including chord progression formulas, chord alteration, lead-sheet paraphrasing, countermelody and bass-line construction, and creative application.

Au Qtr. 2 cl. Prereq: 222 and 225.

**232\*\* Jazz Keyboard Harmony U 2**

Designed to provide students with piano skills that directly relate to other jazz areas such as composition, arranging, and improvisation.

Wi Qtr. 3 cl. Prereq: 231 and 261.01.

**240 Listening to Music Literature U 1**

Basic instruction in listening to and recognizing the elements and procedures that underlie musical style; aural analysis of masterworks from the 18th-20th centuries.

Sp Qtr. 2 cl. Open only to music majors. This course is graded S/U.

**241 Music History I U 3**

The development of European art music from the earliest times through the 16th century.

Au Qtr. 4 cl, 1 1-hr lab. Prereq: 240.

**242 Music History II U 3**

The development of European and American art music in the 17th and 18th centuries.

Wi Qtr. 4 cl, 1 1-hr lab. Prereq: 241.

**243 Music History III U 3**

The development of European and American art music in the 19th and 20th centuries.

Sp Qtr. 4 cl, 1 1-hr lab. Prereq: 242.

**244 Survey of African and African-Derived Music in the Western World U 3**

An introduction to traditional African music and its role in the history and development of Afro-American music with its concomitant sociopolitical milieu.

Wi, Sp Qtrs. 3 cl. Not open to students with credit for AfAm&AS 244. Cross-listed in African-American and African Studies. VPA Admis Cond course.

**261 Applied Music Methods and Materials I**

These courses are available for EM credit.

**261.01 Piano U 1**

Au Qtr. 2 cl. Prereq: Music major and prereq or concur: 221. Not open to keyboard majors.

**261.02\*\* Voice U 1-2**

Au Qtr. 4 cl. Not open to voice majors.

**261.03 Strings U 1-2**

Au Qtr. 4 cl.

**261.05 Brass U 1-2**

Au Qtr. 4 cl. Not open to brass majors.

**261.07 Percussion U 1-2**

Wi, Sp Qtrs. 4 cl.

**261.11 Basic Conducting Laboratory U 2**

Basic conducting skill development emphasizing pulse, rhythm and physical coordination.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 223.

**261.35 Guitar U 2**

Wi Qtr. 3 cl. Prereq: 170. Open only to mus edu majors. Not open to music majors with guitar specializations.

**261.41 Flute U 1**

Au, Wi, Sp Qtrs. 4 cl. 5-wk course. Limited to dept majors.

**261.42 Oboe U 1**

Au, Wi, Sp Qtrs. 4 cl. 5-wk course. Prereq: 261.41 or 261.43. Limited to dept majors.

**261.43 Clarinet U 1**

Au, Wi, Sp Qtrs. 4 cl. 5-wk course. Limited to dept majors.

**261.45 Saxophone U 1**

Au, Wi, Sp Qtrs. 4 cl. 5-wk course. Limited to dept majors.

**261.46 Bassoon U 1**

Au, Wi, Sp Qtrs. 4 cl. 5-wk course. Prereq: 261.41 or 261.43. Limited to dept majors.

**261.99 Wind, Strings, and Percussion U 2**

Functional knowledge of wind, strings, and percussion instruments.

Sp Qtr. 4 cl. Prereq: 170 Limited to dept. majors; Not open to instrumental majors.

**262 Applied Music Methods and Materials II**

These courses are available for EM credit.

**262.01 Piano U 1**

Wi Qtr. 2 cl. Prereq: Music major and 261.01. Not open to keyboard majors.

**262.02\*\* Voice U 2**

Wi Qtr. 4 cl. Prereq: 261.02 Not open to voice majors.

**262.03 Strings U 2**

Wi Qtr. 4 cl. Prereq: 261.03.

**262.05 Brass U 2**

Wi, Sp Qtrs. 4 cl. Prereq: 261.05.

**262.11 Conducting (Instrumental) U 2**

Conducting instruction applied to band, orchestra and ensemble literature and performance.

Wi, Sp Qtrs. 4 cl. Prereq: 261.11.

**262.12 Conducting (Choral) U 2**

Conducting instruction applied to choral literature and performance problems.

Wi, Sp Qtrs. 4 cl. Prereq: 261.11.

**263 Applied Music Methods and Materials III**

Prereq: 262 or equiv. These courses are available for EM credit.

**263.01 Piano U 1**

Sp Qtr. 2 cl. Prereq: Music major and 262.01 or equiv.

**263.02 Voice U 2**

Sp Qtr. 4 cl.

**264 Applied Music Methods and Materials IV**

Prereq: 263 or equiv. These courses are available for EM credit.

**264.01 Piano U 1**

Au Qtr. 2 cl. Prereq: 263.01 or equiv and passage of Level Change Proficiency by a score of 70 or better.

**264.02 Voice U 2**

Au Qtr. 4 cl.

**265 Applied Music Methods and Materials V****265.01 Piano U 1**

Functional keyboard skills for the music major, including sight-reading, harmonization, open score reading, accompanying and improvisation.

Wi Qtr. 2 cl. Prereq: Music major and 264.01 or equiv.

**266 Applied Music Methods and Materials VI****266.01 Piano U 1**

Functional keyboard skills for the music major, including sight-reading, harmonization, open score reading, accompanying and improvisation.

Sp Qtr. 2 cl. Prereq: Music major and 265.01 or equiv. Repeatable to a maximum of 2 cr hrs.

**267\* String Pedagogy for the Applied Studio U 2**

The organization, development, and pedagogy for the applied string instrument studio.

Au Qtr. 1 2-hr cl, 5-hr lab. Prereq: 201 or permission of instructor.

**268 Instrument Repair U 1**

Development of practical skills in identifying and correcting minor repair problems on band and orchestral instruments and their accessories.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 262.04, 262.05, and permission of instructor. Repeatable to a maximum of 2 cr hrs.

**269 Orientation to Music Education U 1**

Overview of career options in music education; includes clinical/field observation in a variety of settings.

Sp Qtr. 1 cl, 1 2-hr lab. Prereq: Enrollment in School of Music. Not open to students with credit for 170.

**270 Basic Experiences in Music U 4**

Basic and extended experiences in elements of music through singing, listening to music, playing instruments, and reading and creating music.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Soph standing. This course is available for EM credit.

**293 Individual Studies****293.01 Composition U 1-3**

Au, Wi, Sp Qtrs. Prereq: Written permission of area chairperson. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Supervised group studies of special problems.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**297 Music Education Laboratory Ensemble U 1**

Laboratory ensembles which provide performance experience on secondary instruments.

Sp Qtr. 2 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 3 cr hrs. Including cr hrs earned in 197. VPA Admis Cond course.

**310 Introduction to Operatic Stage Techniques U 2**

An introductory course to stage movement techniques, character analysis, role preparation, as applied to the operatic stage.

Au Qtr. 3 cl. Prereq: 401.21 or 402.21 or permission of instructor.

**311 Opera Scenes U 2**

A performance ensemble class devoted to the rehearsing and performing of opera scenes; basic rehearsal and performing techniques for operatic literature.

Wi Qtr. 3 1.5-hr cl. Prereq: 310 or permission of instructor. Open only to music majors by audition. Repeatable to a maximum of 8 cr hrs.

**312 Opera Performance U 2**

Instruction and experience in preparation for opera performance, including study of operatic literature and coaching of operatic roles.

Au, Wi, Sp Qtrs. 12 lab hrs. Prereq: 310 or permission of instructor. Admittance by audition only. Repeatable to a maximum of 10 cr hrs.

**341\* Music in the United States U 5**

Music by American composers and the place of music in American life from colonial times to the present.

Wi Qtr. 4 cl, 1 lab hr. Prereq: English 110 or 111 or equiv, and 141 or permission of instructor. GEC arts and hums VPA course.

**345 Topics in Music**

Topic varies; study of selected topics in music.

Arr.

**345.01 Music History U 3-5**

Topic varies; study of selected topics in the history of Western music. Prereq: 141. Repeatable to a maximum of 15 cr hrs. Not offered at the Columbus Campus. GEC arts and hums VPA course.

**347\*\* Great Composers of 18th Century Europe U 3**

The styles and genres of five eminent composers of the 18th century: Bach, Handel, Mozart, Haydn, and Beethoven.

Au Qtr. 3 cl. Prereq: English 110 or 111 or equiv. GEC arts and hums VPA course.

**349\* 20th-Century Music U 3**

The main trends in Western art music from Debussy to the avant garde.

Sp Qtr. 3 cl. Prereq: English 110 or 111 or equiv. GEC arts and hums VPA course.

**351 The World of Music U 3**

Introduction to music in non-Western cultures and societies and to the concepts, vocabulary, and methodology for dealing with this music.

Au Qtr. 3 cl, 1 1-hr lab. Prereq: Soph standing or higher. Not open to students with credit for 250. Open only to music majors.

**352 Selected World Musics, Group I U 3**

An introduction to music in various Native American, African, and Eastern European cultures.

Wi Qtr. 3 cl. Prereq: 250 or 351. Not open to students with credit for 251.

**353 Selected World Musics, Group II U 3**

An introduction to music in various South Indian, Indonesian, and Latin American cultures.

Sp Qtr. 3 cl. Prereq: 250 or 351. Not open to students with credit for 252.

**370 Music for Elementary Teachers U 3**

Music literature and teaching aids for children, including singing, rhythmic, creative, and listening experiences, and their presentation.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 270 and professional standing.

**372 Music for Teachers of Young Children U 3**

Instructional materials, methods, and musical skills needed for guiding young children's music and movement learning experiences applied to preschools and kindergarten.

Au Qtr. 2 1.5-hr cl. Not open to music majors. Designed for prospective teachers of young children and personnel of preschools and kindergartens.

**373 Music for Special Education Teachers U 3**

Music literature and teaching strategies for exceptional children, including singing, rhythmic, creative, and listening experiences.

Wi, Sp Qtrs. 5 cl. Prereq: Jr or sr standing in Edu-PAES.

**401 Applied Music (Principal)**

Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl and recital attendance arr. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music.

**401.11 Piano U 2**

Repeatable to a maximum of 8 cr hrs.

**401.12 Jazz Piano U 2**

Repeatable to a maximum of 8 cr hrs.

**401.21 Voice U 2**

Repeatable to a maximum of 8 cr hrs.

**401.31 Violin U 2**

Repeatable to a maximum of 8 cr hrs.

**401.32 Viola U 2**

Repeatable to a maximum of 8 cr hrs.

**401.33 Cello U 2**

Repeatable to a maximum of 8 cr hrs.

**401.34 Double Bass U 2**

Repeatable to a maximum of 8 cr hrs.

**401.36 Jazz Bass U 2**

Repeatable to a maximum of 8 cr hrs.

**401.37 Jazz Guitar U 2**

Repeatable to a maximum of 8 cr hrs.

**401.41 Flute U 2**

Repeatable to a maximum of 8 cr hrs.

**401.42 Oboe U 2**

Repeatable to a maximum of 8 cr hrs.

**401.43 Clarinet U 2**

Repeatable to a maximum of 8 cr hrs.

**401.44 Bass Clarinet U 2**

Repeatable to a maximum of 8 cr hrs.

**401.45 Saxophone U 2**

Repeatable to a maximum of 8 cr hrs.

**401.46 Bassoon U 2**

Repeatable to a maximum of 8 cr hrs.

**401.47 Jazz Saxophone U 2**

Repeatable to a maximum of 8 cr hrs.

**401.51 Horn U 2**

Repeatable to a maximum of 8 cr hrs.

**401.52 Trumpet U 2**

Repeatable to a maximum of 8 cr hrs.

**401.53 Trombone U 2**

Repeatable to a maximum of 8 cr hrs.

**401.54 Euphonium U 2**

Repeatable to a maximum of 8 cr hrs.

**401.55 Tuba U 2**

Repeatable to a maximum of 8 cr hrs.

**401.56 Jazz Trumpet U 2**

Repeatable to a maximum of 8 cr hrs.

**401.57 Jazz Trombone U 2**

Repeatable to a maximum of 8 cr hrs.

**401.71 Percussion U 2**

Repeatable to a maximum of 8 cr hrs.

**401.72 Jazz Percussion U 2**

Repeatable to a maximum of 8 cr hrs.

**401.91 Harp U 2**

Repeatable to a maximum of 8 cr hrs.



**402 Applied Music (Major)**

Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl and recital attendance arr. Prereq: 201 and written permission of applied area faculty.

**402.11 Piano U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.21 Voice U 3**

Repeatable to a maximum of 16 cr hrs.

**402.31 Violin U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.32 Viola U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.33 Cello U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.34 Double Bass U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.41 Flute U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.42 Oboe U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.43 Clarinet U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.44 Bass Clarinet U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.45 Saxophone U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.46 Bassoon U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.51 Horn U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.52 Trumpet U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.53 Trombone U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.54 Euphonium U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.55 Tuba U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.71 Percussion U 2,4**

Repeatable to a maximum of 16 cr hrs.

**402.91 Harp U 2,4**

Repeatable to a maximum of 16 cr hrs.

**412 Italian Diction for Singers U 2**

Advanced study of phonetics and sound production as applied to singing in Italian.

Sp Qtr. 3 cl. Prereq: 212.

**413 German Diction for Singers U 2**

Advanced study of phonetics and sound production as applied to singing in German.

Au Qtr. 3 cl. Prereq: 212.

**414 French Diction for Singers U 2**

Advanced study of phonetics and sound production as applied to singing in French.

Wi Qtr. 3 cl. Prereq: 212.

**421 Music Theory IV U 3**

Principles of 18th- and 19th-century chromatic harmony and modulation; extensive practice in part-writing, analysis, and creative application.

Au Qtr. 3 cl. Prereq: 223.

**422 Music Theory V U 3**

Compositional techniques in early 20th-century music; extensive practice through written drill, analysis, and creative projects.

Wi Qtr. 3 cl. Prereq: 421.

**423 Music Theory VI U 3**

Continuation of 422, focusing on more recent developments in 20th-century music (emphasis on creative projects).

Sp Qtr. 3 cl. Prereq: 422.

**424 Aural Training III U 2**

Intensive training in aural musicianship and music reading; practical application through solfege, dictation, and keyboard drill.

Au Qtr. 4 lab hrs. Prereq: 226. Not open to students with credit for 430.01.

**425 Aural Training IV U 2**

A continuation of 424 at a more advanced level.

Wi Qtr. 4 lab hrs. Prereq: 424. Not open to students with credit for 430.02.

**426 Aural Training V U 2**

A continuation of 425; aural training at an advanced level.

Sp Qtr. 4 lab hrs. Prereq: 425. Not open to students with credit for 430.03.

**427\* Keyboard Harmony I U 2**

Systematic review and utilization of basic harmonic materials at the keyboard.

Au Qtr. 2 cl. Prereq: 201.01 (6 cr hrs), 261.01, 262.01, and 263.01 (6 cr hrs).

**428\* Keyboard Harmony II U 2**

Introduction to score reading at the keyboard.

Wi Qtr. 2 cl. Prereq: 427.

**429\* Keyboard Harmony III U 2**

Continued practical experience in score reading at the keyboard.

Sp Qtr. 2 cl. Prereq: 428.

**433 Scoring for Jazz Ensembles****433.02\*\* Small Jazz Ensembles U 3**

Scoring projects for jazz combos of various sizes and instrumentation.

Wi Qtr. 3 cl. Prereq: 223 and 231.

**433.03\* Large Jazz Ensembles U 3**

Scoring projects for the stage band, with concentration on voicing, ranges, doublings, balance, and notational procedures.

Wi Qtr. 3 cl. Prereq: 433.02. Not open to students with credit for 433.01.

**446\*\* Survey of Jazz Styles U 3**

Stylistic variants of jazz involving technical and structural aspects so that the student may recognize, play, and score them authentically.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**470 Introduction to Music Education U 4**

Professional orientation for prospective school music teachers; study of musical development, human relations, discipline, evaluation, philosophy of teaching, and the music curriculum; comprehensive field experience.

Au, Wi Qtrs. 2 cl, 2 2-hr labs. Prereq: Soph standing in music educ and Psych 100.

**500 Review of Music Topics**

Review of selected music topics; intended for beginning graduate students in music.

Su, Wi, Sp Qtrs. 3 cl. Prereq: Grad standing in music.

**500.01 Review of Music Analysis Techniques G 3**

Review of notation symbology, nomenclature, part-writing practices, and analytic techniques related to Western music composed from the mid-18th through the mid-20th centuries.

Sp Qtr. Not open to students with credit for 620. Repeatable to a maximum of 9 cr hrs.

**500.02 Review of Music History G 3**

Review of Western music history from ancient Greek times to the present; study of genres, composers, and elements of musical styles.

Su, Wi Qtrs. Repeatable to a maximum of 9 cr hrs.

**501 Applied Music (Principal)**

Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music.

**501.11 Piano U 2**

Repeatable to a maximum of 8 cr hrs.

**501.12 Jazz Piano U 2**

Repeatable to a maximum of 8 cr hrs.

**501.21 Voice U 2**

Repeatable to a maximum of 8 cr hrs.

**501.31 Violin U 2**

Repeatable to a maximum of 8 cr hrs.

**501.32 Viola U 2**

Repeatable to a maximum of 8 cr hrs.

**501.33 Cello U 2**

Repeatable to a maximum of 8 cr hrs.

**501.34 Double Bass U 2**

Repeatable to a maximum of 8 cr hrs.

**501.35 Guitar U 2**

Repeatable to a maximum of 8 cr hrs.

**501.36 Jazz Bass U 2**

Repeatable to a maximum of 8 cr hrs.

**501.37 Jazz Guitar U 2**

Repeatable to a maximum of 8 cr hrs.

**501.41 Flute U 2**

Repeatable to a maximum of 8 cr hrs.

**501.42 Oboe U 2**

Repeatable to a maximum of 8 cr hrs.

**501.43 Clarinet U 2**

Repeatable to a maximum of 8 cr hrs.

**501.44 Bass Clarinet U 2**

Repeatable to a maximum of 8 cr hrs.

**501.45 Saxophone U 2**

Repeatable to a maximum of 8 cr hrs.

**501.46 Bassoon U 2**

Repeatable to a maximum of 8 cr hrs.

**501.47 Jazz Saxophone U 2**

Repeatable to a maximum of 8 cr hrs.

**501.51 Horn U 2**

Repeatable to a maximum of 8 cr hrs.

**501.52 Trumpet U 2**

Repeatable to a maximum of 8 cr hrs.

**501.53 Trombone U 2**

Repeatable to a maximum of 8 cr hrs.

**501.54 Euphonium U 2**

Repeatable to a maximum of 8 cr hrs.

**501.55 Tuba U 2**

Repeatable to a maximum of 8 cr hrs.

**501.56 Jazz Trumpet U 2**

Repeatable to a maximum of 8 cr hrs.

**501.57 Jazz Trombone U 2**

Repeatable to a maximum of 8 cr hrs.

**501.71 Percussion U 2**

Repeatable to a maximum of 8 cr hrs.

**501.72 Jazz Percussion U 2**

Repeatable to a maximum of 8 cr hrs.

**501.91 Harp U 2**

Repeatable to a maximum of 8 cr hrs.

**502 Applied Music (Major)**

Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl and recital attendance arr. Prereq: 402 and written permission of applied area faculty.

**502.11 Piano U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.12 Jazz Piano U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.21 Voice U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.31 Violin U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.32 Viola U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.33 Cello U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.34 Double Bass U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.36 Jazz Bass U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.37 Jazz Guitar U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.41 Flute U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.42 Oboe U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.43 Clarinet U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.44 Bass Clarinet U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.45 Saxophone U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.46 Bassoon U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.47 Jazz Saxophone U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.51 Horn U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.52 Trumpet U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.53 Trombone U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.54 Euphonium U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.55 Tuba U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.56 Jazz Trumpet U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.57 Jazz Trombone U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.71 Percussion U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.72 Jazz Percussion U 3,4**

Repeatable to a maximum of 16 cr hrs.

**502.91 Harp U 3,4**

Repeatable to a maximum of 16 cr hrs.

**510\*\* Advanced Jazz Improvisation U 3**

Advanced techniques of improvisation; the use of modal devices, complex meters, and innovative forms; concern for speed, endurance, energy levels, and problems of unaccompanied performance.

Sp Qtr. 3 cl. Prereq: 211 or permission of instructor.

**521 Form and Analysis U 3**

Detailed study of the structural principles and forms of homophonic music.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 423.

**524 Orchestration I U 3**

A fundamental course in scoring for the instruments of the orchestra and band in transcriptions and arrangements.

Wi, Sp Qtrs. 3-hr cl. Prereq: 423.

**531 Elementary Studies in Counterpoint U 3**

A fundamental course in counterpoint including study of the basic principles of 16th-century polyphony.

Au Qtr. 3 cl. Prereq: 423.

**533\* Jazz Composition U 3**

Designed to develop the skills necessary for composing/arranging for small, mixed, and large jazz ensembles.

Sp Qtr. 3 cl. Prereq: 433.03.

**535 Composition I U 3**

A fundamental course in composition, with emphasis on creative writing in the small forms.

Au Qtr. 3 cl. Prereq: 423.

**546\* Modern and Contemporary Jazz Styles U 3**

Modern and contemporary jazz styles from the Be-bop School of the 1940's to the present day.

Sp Qtr. 3 cl. Prereq: 446.

**555 Studies in Musicology**

Introduction to specialized topics and issues in historical musicology and ethnomusicology.

2 1.5-hr cl. Prereq: Admission to BM in music history or permission of instructor.

**555.01\* Medieval Music U 4**

Au Qtr.

**555.02\* Renaissance Music U 4**

Wi Qtr.

**555.03\* Baroque Music U 4**

Sp Qtr.

**555.04\* Classic Music U 4**

Au Qtr.

**555.05\* Romantic Music U 4**

Wi Qtr.

Wi Qtr.

**555.06 20th-Century Music U 4**

Sp Qtr.

**555.07 19th-Century Russian Music U 5**

**555.08 20th-Century Russian Music U 5**

**555.09 Contemporary Art Music of Africa and the Diaspora U 5**

**555.10 Performance Practices in African Music U 3**

**566\* Jazz Ensemble Techniques U 3**

The organization and operation of the public school jazz ensemble.

Wi Qtr. 3-hr cl. Prereq: Permission of instructor.

**572 Teaching General Music in Secondary Schools U 3**

The role of music in adolescents' general education and the development of competencies essential to teaching.

Au, Wi Qtrs. 3 cl. Prereq: Professional standing in music education.

**574 Teaching Choral Music I U 3**

Comprehensive choral music education, rehearsal techniques, and concert preparation; quarter culminates in choral recital.

Au Qtr. 3 cl. Prereq: 262.12 and 264.02, and professional standing in music education.

**575 Teaching Choral Music II U 3**

Curriculum planning for elementary through high school choirs, ethical and social issues, and survey of OMEA and world choral music repertoire.

Wi Qtr. 3 cl. Prereq: 574 and professional standing in music education.

**576 Teaching Instrumental Music in Elementary and Middle Schools U 3**

The role of instrumental music instruction in education, techniques of teaching instrumental music, study of music appropriate to musical organizations in elementary and middle schools.

Au Qtr. 3 cl. Prereq: 261.07, 261.41, 261.42, 261.43, 261.45, 261.46, 262.03, 262.05, 262.11, and professional standing in music education.

**577 Teaching Instrumental Music in Secondary Schools U 3**

The role of instrumental music instruction in public education, techniques of teaching instrumental music, study of music appropriate to musical organizations in secondary schools.

Wi Qtr. 3 cl, 1 1-hr lab. Prereq: 576 and professional standing in music education.

**578 Teaching General Music in Elementary Schools I: Introduction and Repertoire U 3**

Introduction to Dalcroze and Orff methodologies; study and analysis of music repertoire suitable for children in elementary schools.

Au Qtr. 2 1.5-hr cl, 1 lab hr. Prereq: Professional standing in music education. Not open to students with credit for 571.

**579 Teaching General Music in Elementary Schools II: Planning and Practicum U 3**

A study of Kodaly and intermediate Orff methodologies; the planning and implementation of musical experiences for children in elementary schools.

Wi Qtr. 2 1.5-hr cl, 1 lab hr. Prereq: 578 and professional standing in music education. Not open to students with credit for 570.

**586 Student Teaching in Music in Elementary Schools U 3-8**

Assignment to area elementary schools for observation and teaching experiences with groups of students and cooperating teachers; students attend weekly seminars with University supervisors.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 8 cr hrs.

**587 Student Teaching in Music in Secondary Schools U 3-8**

Assignment to area secondary schools for observation and teaching experiences with groups of students and cooperating teachers; students attend weekly seminars with University supervisors.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 8 cr hrs.

**591\* Survey of the Music Industry U 3**

Economic aspects of music in America with reference to recordings, films, TV, radio, music theatre, booking, management, publishing, and manufacturing.

Sp Qtr. 3 cl. Prereq: Sr standing or permission of instructor.

**601 Applied Music (Principal)**

Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music.

**601.11 Piano U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.21 Voice U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.31 Violin U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.32 Viola U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.33 Cello U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.34 Double Bass U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.35 Guitar U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.41 Flute U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.42 Oboe U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.43 Clarinet U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.44 Bass Clarinet U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.45 Saxophone U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.46 Bassoon U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.51 Horn U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.52 Trumpet U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.53 Trombone U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.55 Tuba U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.71 Percussion U 1,2**

Repeatable to a maximum of 8 cr hrs.

**601.91 Harp U 1,2**

Repeatable to a maximum of 8 cr hrs.

**602 Applied Music (Major)**

Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: 502 and written permission of applied area faculty.

**602.11 Piano U 4**

Repeatable to a maximum of 24 cr hrs.

**602.21 Voice U 4**

Repeatable to a maximum of 24 cr hrs.

**602.31 Violin U 4**

Repeatable to a maximum of 24 cr hrs.

**602.32 Viola U 4**

Repeatable to a maximum of 24 cr hrs.

**602.33 Cello U 4**

Repeatable to a maximum of 24 cr hrs.

**602.34 Double Bass U 4**

Repeatable to a maximum of 24 cr hrs.

**602.41 Flute U 4**

Repeatable to a maximum of 24 cr hrs.

**602.42 Oboe U 4**

Repeatable to a maximum of 24 cr hrs.

**602.43 Clarinet U 4**

Repeatable to a maximum of 24 cr hrs.

**602.44 Bass Clarinet U 4**

Repeatable to a maximum of 24 cr hrs.

**602.45 Saxophone U 4**

Repeatable to a maximum of 24 cr hrs.

**602.46 Bassoon U 4**

Repeatable to a maximum of 24 cr hrs.

**602.51 Horn U 4**

Repeatable to a maximum of 24 cr hrs.

**602.52 Trumpet U 4**

Repeatable to a maximum of 24 cr hrs.

**602.53 Trombone U 4**

Repeatable to a maximum of 24 cr hrs.

**602.54 Euphonium U 4**

Repeatable to a maximum of 24 cr hrs.

**602.55 Tuba U 4**

Repeatable to a maximum of 24 cr hrs.

**602.71 Percussion U 4**

Repeatable to a maximum of 24 cr hrs.

**602.91 Harp U 4**

Repeatable to a maximum of 24 cr hrs.

**607 Performance Enhancement I U G 1**

Skills and techniques designed to enhance the quality of public performances.

Au, Wi, Sp Qtrs. 1 cl. Not limited to music majors. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**608 Performance Enhancement II U G 1**

Advanced skills and techniques designed to enhance the quality of public performances.

Au, Wi, Sp Qtrs. 1 cl. Prereq: 607 or permission of instructor. Not limited to music majors. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**610 Alexander Technique U G 1**

The relationship of kinesthetic perception and the postural reflexes to physical coordination in performance.

Au, Wi, Sp Qtrs. 2 cl. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**611 Introduction to Piano Pedagogy U G 3**

A critical analysis of various methods and principles of piano instruction, and of literature for the beginning and intermediate performer.

Au Qtr. 2 1.5-hr cl. Prereq: 6 cr hrs in 501.01 or 501.11 or permission of instructor.

**612 Piano Pedagogy: Group Instruction U G 3**

Concepts of group piano instruction, techniques for development of keyboard musicianship, and knowledge of appropriate materials.

Wi Qtr. 3 cl. Prereq: 6 cr hrs in 501.01 or 501.11 or permission of instructor.

**613 Piano Pedagogy: Practicum U G 3**

To provide supervised experience in piano instruction and guidance in the development of sequences of instruction and in the treatment of specific teaching problems.

Sp Qtr. 3 cl. Prereq: 611 or 612 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**621 Theory and Analysis: 17th-18th Centuries U G 3**

Analysis of representative works from the 17th-18th century, introducing relevant theoretical concepts.

Wi Qtr. 3 cl. Prereq: 521 or 620, or a score in the upper third on the grad placement exam.

**622 Theory and Analysis: 19th Century U G 3**

Analysis of representative works from the 19th century, introducing relevant theoretical concepts.

Sp Qtr. 3 cl. Prereq: 521 or 620, or a score in the upper third on the grad placement exam.

**623 Theory and Analysis: 20th Century U G 3**

Analysis of representative works from the 20th century, introducing relevant theoretical concepts.

Au Qtr. 3 cl. Prereq: 521 or 620, or a score in the upper third on the grad placement exam.

**625\* Orchestration II U G 3**

Study of 20th-century orchestration techniques, including readings in recent literature on timbre and timbre perception; scoring of transcriptions and students' compositions for various ensembles.

Sp Qtr. 3 cl. Prereq: 524.

**630 Composers Seminar U G 1**

Contemporary topics in composition and theory; presentation, performance, and criticism of student compositions and papers.

Au, Wi, Sp Qtrs. 1 1.5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**631\*\* Intermediate Studies in Counterpoint U G 3**

Counterpoint based on the polyphonic style of the 18th century; analysis of representative works and practice in writing two- and three-part inventions.

Wi Qtr. 3 cl. Prereq: 531 or permission of instructor.

**635 Composition II U G 3-5**

Practice in creative writing; analysis, and evaluation; employment of contemporary methods of composition.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 535 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

**636 Introduction to Electronic Music Synthesis U G 3**

Techniques of composition with electronic media; history, literature, and criticism; score preparation; principles of audio engineering; relationships to other communications media.

Au Qtr. 3 cl. Prereq: 423 and permission of instructor.

**637 Composition with Electronic Media I U G 3-5**

Individual composition projects; further study of sound synthesis techniques, including modification of natural sounds.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 535, real time electro acoustical modification or equiv and 636. Repeatable to a maximum of 9 cr hrs.

**638\*\* Audio Recording U G 3**

Audio recording; microphones and microphone placement; multiple-track recording; mixing; equalization and special effects.

Wi Qtr. 3 cl. Prereq: Elec Eng 201 or equiv with written permission of instructor. Not open to students with credit for Elec Eng 626.

**639\*\* Audio Recording Laboratory U G 2**

Creating an audio recording; familiarity with the recording studio and console, use and placement of microphones; multiple-track recording equalization and special effects; mixing.

Sp Qtr. 1 cl, 1 3-hr lab. Prereq: 638. Not open to students with 6 cr hrs of Elec Eng 627. Repeatable to a maximum of 6 cr hrs.

**646\*\* History of Music in the United States U G 3**

A survey of music in the United States from colonial times until the present.

Wi Qtr. 3-hr cl. Prereq: Jr or sr standing.

**647\* Individual Composers: Their Lives and Works U G 3**

A comprehensive study of the works of an individual composer; topic varies from year to year.

3 cl. Prereq: 521 or 531, and 243.

**648\* History and Literature of Chamber Music U G 3**

A survey of the history and stylistic development of chamber music.

Wi Qtr. 2 1.5-hr cl. Prereq: 243 and 521 or 531.

**649\*\* History and Literature of Symphonic Music U G 3**

A survey of the history and stylistic development of symphonic music.

Au Qtr. 2 1.5-hr cl. Prereq: 243 and 521 or 531.

**650\*\* History and Literature of Choral Music U G 3**

A survey of the history and stylistic development of choral music.

2 1.5-hr cl. Prereq: 243 and 521 or 531.

**651\* History and Literature of Opera U G 3**

A survey of the history and stylistic development of opera.

Sp Qtr. 2 1.5-hr cl. Prereq: 243 and 521 or 531.

**652 18th and 19th Century Song Literature U G 3**

The study of selected 18th and 19th century song literature.

Au Qtr. 3 cl. Prereq: 243 and 423.

**653 Piano Literature U G 3**

A study of the piano sonata and other characteristic forms from the pre-piano period to the present time.

Sp Qtr. 3 cl. Prereq: 243 and 521 or 531.

**655 20th Century Song Literature U G 3**

The study of selected 20th century song literature.

Wi Qtr. 2 1.5-hr cl. Prereq: 652 or grad standing.

**660 Advanced Conducting (Instrumental) U G 3**

An attempt to develop the power to interpret the larger forms of instrumental literature and to read from full score.

Wi Qtr. 3 cl. Prereq: 262.11 and 521.

**661 Advanced Conducting (Choral) U G 3**

Development of power to interpret the larger forms of choral literature and to read from full score.

Sp Qtr. 3 cl. Prereq: 262.12 and 521.

**662 Choral Repertoire U G 2**

Reading and study of sacred and secular choral literature.

Su, Wi Qtrs. 1 cl, 1 2-hr lab. Repeatable to a maximum of 6 cr hrs.

**665 Content and Structure in Arts Education U G 3**

Students from art, dance, music, and theatre education engage in dialogue, research, and peer teaching focused upon the educational content and structure of each discipline.

Sp Qtr. 1 2.5-hr cl. Open only to majors in art, dance, music, and theatre education and to grad students seeking certification. Not open to students with credit for Art Educ 665. Cross-listed in Art Education.

**666 Marching Band Techniques U G 3**

A study of the marching band including laboratory work in marching techniques, computerized charting, and show design.

Sp Qtr. 1 3-hr cl. Not open to freshmen. Open to non-music majors with written permission of instructor.

**669 Music Methods for Elementary Classroom Teachers G 3**

Analysis and appraisal of the music program in elementary schools; relationship of music to total school program; some emphasis on integrating the arts in education.

Su, Su Term 1 Qtr. 3 2-hr cl. Prereq: 270 or permission of instructor.

**672 Introduction to Ethnomusicology U G 3**

General concepts of ethnomusicology applied to the study of different ways in which music has been used outside the Western European tradition of the fine arts.

Au Qtr. 2 1.5-hr cl. Prereq: Jr or sr or grad standing.

**675\* Music of the Russian Folk Tradition U G 3**

An interdisciplinary study of traditional music of Russian peasants.  
2 1.5-hr cl. Prereq: Jr or sr or grad standing.

**676\* Music Technology G 2**

A graduate-level overview of music technology as used in research, education, performance and composition.  
Wi Qtr. 2 1-hr cl. Prereq: Permission of instructor. Not open to students with credit for 220.

**677^\* Multimedia for Musicians U G 3**

Designed to provide musicians with the tools to create multimedia works for use in music education, research, or as a creative medium.  
Sp Qtr. 3 1-hr cl. Prereq: 220 or 676 or permission of instructor.

**679 Music Theory and Composition Senior Project U 2**

Composition students: preparation of senior composition and half recital of student's compositions; theory students: preparation of senior paper and presentation of paper.

Au, Wi, Sp Qtrs. Prereq: Admission into music theory and composition major and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**685^ Women and Music U G 3**

A consideration of the roles of women in Western music, building upon current scholarship in the areas of women in music and of gender studies.  
2 1.5-hr cl. Prereq: 243 and 521 or 531, or equivs. Not open to students with credit for 344.

**692 Workshop in Music U G 1-15**

Concentrated study in an area of music; content of workshop depends on selected emphasis.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies U G 1-5**

Individual studies in specified problems in the field of music.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Supervised group studies of special problems in the field of music.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**701 Applied Music (Non-Major)**

Applied music study with special emphasis on literature and performance practices.

Au, Wi, Sp Qtrs. .5-hr lesson with 1-cr registration; 1-hr lesson with 2-cr registration. Prereq: Placement exam or permission of applied area faculty.

**701.11 Piano U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.21 Voice U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.31 Violin U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.32 Viola U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.33 Cello U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.34 Double Bass U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.41 Flute U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.42 Oboe U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.43 Clarinet U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.44 Bass Clarinet U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.45 Saxophone U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.46 Bassoon U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.51 Horn U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.52 Trumpet U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.53 Trombone U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.54 Euphonium U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.55 Tuba U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.71 Percussion U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**701.91 Harp U G 1,2**

Repeatable to a maximum of 12 cr hrs.

**710 Introduction to Operatic Stage Techniques G 2**

An introduction to stage movement techniques, character analysis, role preparation, and aria interpretation as applied to the operatic stage.

Au Qtr. 3 cl. Prereq: Grad standing in voice or permission of instructor.

**715 Structure and Function of the Singing Mechanism G 3**

The structure and function of the singing and breathing mechanisms as they relate to developmental teaching of voice in the formative years.

Au Qtr. 3 cl. Prereq: Permission of instructor. Not open to students with credit for 615.

**727 Keyboard Harmony for Graduate Students G 3**

Application of keyboard musicianship, including sight reading, harmonization of melodies, improvisation, transposition, realization of figured bass and modulation.

Au Qtr. 3 cl. Prereq: 264.01, 423, or equiv with written permission of instructor.

**740^\* Studies in Medieval Music G 4**

An introduction to scholarly issues in the music of the Middle Ages.

Au Qtr. 2 1.5-hr cl. Prereq: 241 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 640.

**741^\* Studies in Renaissance Music G 4**

An introduction to scholarly issues in the music of the Renaissance.

Wi Qtr. 2 1.5-hr cl. Prereq: 241 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 641.

**742^\* Studies in Baroque Music G 4**

An introduction to scholarly issues in the music of the Baroque era.

Sp Qtr. 2 1.5-hr cl. Prereq: 242 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 642.

**743^\* Studies in Classic Music G 4**

An introduction to scholarly issues in the music of the classic era.

Au Qtr. 2 1.5-hr cl. Prereq: 242 or equiv; 521 or equiv; grad standing. Not open to students with credit for 643.

**744^\* Studies in Romantic Music G 4**

An introduction to scholarly issues in the music of the romantic era.

Wi Qtr. 2 1.5-hr cl. Prereq: 243 or equiv; 521 or equiv; grad standing. Not open to students with credit for 644.

**745^\* Studies in 20th-Century Music G 4**

An introduction to scholarly issues in the music of the twentieth century.

Sp Qtr. 2 1.5-hr cl. Prereq: 243 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 645.

**746^\* Studies in 19th-Century Russian Music G 5**

An introduction to scholarly issues in 19th-century Russian music.

2 1.5-hr cl. Prereq: Grad standing in music or Slavic. Not open to students with credit for 673.

**747^\* Studies in 20th-Century Russian Music G 5**

An introduction to scholarly issues in 20th-century Russian music.

2 1.5-hr cl. Prereq: Grad standing in music or Slavic. Not open to students with credit for 674.

**748\*\* Contemporary Art Music Traditions of Africa and the Diaspora G 5**

An examination of selected published and unpublished musical works by contemporary composers of sub-Saharan Africa and of African descent.  
 Au Qtr. 2 1.5-hr cl. Prereq: 251 or 672, AfAm&ASt 101, and grad standing in music; or permission of instructor. Not open to students with credit for AfAm&ASt 748. Cross-listed in African-American and African Studies.

**752 Performance Literature**

Intensive study of representative literature for the instrument from each style period.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Admission to MM curriculum or permission of instructor.

**752.01 Piano G 3**

Au, Wi Qtrs. Repeatable to a maximum of 6 cr hrs.

**752.02 Voice G 3**

Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs.

**752.03 Strings G 3**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs.

**752.04 Woodwinds G 3**

Au, Wi Qtrs. Repeatable to a maximum of 6 cr hrs.

**752.05 Brass G 3**

Wi Qtr. Repeatable to a maximum of 6 cr hrs.

**752.07\*\* Percussion G 3**

Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs.

**753\*\* Teaching the Technology-Centered Music Curriculum G 3**

The application of current technology to teaching music concept development in elementary and middle grade schools.

Su Qtr. Arr. Prereq: Baccalaureate degree in music or music education.

**756 Improvisation with Orff Instruments U G 3,5****757 Dalcroze Eurhythmics U G 3**

A training in musical rhythm through body experience; eurhythmics is the process of educating the body to internalize rhythmic structures in music and dance.

Wi Qtr. 2 1.3-hr cl. Open to music, dance, and theatre majors. Repeatable to a maximum of 6 cr hrs.

**758\*\* Multicultural Principles and Music Education G 3**

An introduction to current practices in multicultural education with application to music teaching and learning.

Wi Qtr. 1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

**759\* Teaching Music to Culturally Diverse Learners G 3**

Examination of the importance of music as a cultural indicator in learners' responses to and participation in music.

Wi Qtr. 1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

**760 Basic Concepts in Music Education G 3**

The principles of music education and of the educational and cultural objectives derived from related disciplines which give direction and purpose to the music education program.

Au Qtr. 3 cl. Prereq: 586 or 587 or equiv.

**761 Principles of Music Learning G 3**

Analysis of the learning process in music as related to problems of music instruction to the public school.

Sp Qtr. 3 cl. Prereq: 586 or 587 or equiv.

**762\* Principles and Practices in Elementary School Music G 3**

Analysis and appraisal of the music program in elementary schools including the relationship of music to the total school program.

Sp Qtr. 3 cl. Prereq: 578 or equiv.

**763\*\* Literature of Elementary School Music G 3**

A critical study of folk and art music of various cultures and historic periods for the general vocal and listening activities of the integrated curriculum.

Sp Qtr. 3 cl. Prereq: 571 or 578 or equiv.

**764\*\* Principles and Practices in Vocal Music Education G 3**

Analysis and appraisal of the organization, purpose, and development of the vocal music program in secondary schools.

Sp Qtr. 3 cl. Prereq: 575 or equiv.

**765\* Literature for Vocal Music Education G 3**

A study of vocal literature of various cultures and historic periods for use with choral groups in the secondary music program.

Sp Qtr. Prereq: 575 or equiv.

**766\* Teaching Practices in General Music U G 3**

Study of current concepts in organizing and teaching general music in the secondary school.

Wi Qtr. 3 cl. Prereq: 572 or equiv.

**767\*\* Teaching Music as a Related Art U G 3**

Study and preparation for teaching music in a multiple arts or humanities context; emphasis on understandings, organization, and techniques essential for interdisciplinary instruction.

Wi Qtr. 3 cl. Prereq: Course work or background of study and knowledge of another art form.

**768\*\* Principles and Practices in Instrumental Music Education G 3**

Role of instrumental music in the public schools; relationship to society and the total music program, historical development, evaluation, and future trends.

Sp Qtr. 3 cl. Prereq: 577 or equiv.

**769\*\* Literature for Instrumental Music Education G 3**

Relationship of teaching materials and performance repertory to education objectives: selection of literature, interpretation, rehearsal procedures, conducting problems, attainment of musical understanding through literature.

Su, Su Term 1 Qtr. 3 cl. Prereq: 577 or equiv.

**770 Introduction to Research in Music Education G 3**

A study of methods of research as applied to problems in school music.

Wi Qtr. 3 cl. Prereq: 586 or 587 or equiv.

**772\*\* Music in Early Childhood U G 3-5**

Analysis of research, principles, and practices in early childhood music and application to programs of learning for young children.

Sp Qtr. 2 1.5-hr cl. arr. Prereq: Advanced undergrad standing or above and permission of instructor. For students interested in teaching or research in early childhood music and for experienced personnel in teaching young children.

**773\* Introduction to Music for Exceptional Learners G 3**

Overview of issues, principles, practices, and research related to the music education of exceptional persons.

Au Qtr. 1 2.5-hr cl. Prereq: Advanced undergrad standing and permission of instructor.

**774\* Directive Teaching in Music G 3**

Principles and practices of music classroom management; directive teaching emphasizing clarity of objectives, assessment, and systematic instructional procedures for skill and concept teaching.

Su, Su Term 1 Qtr. 1 2.5-hr cl. Prereq: Advanced undergrad standing and permission of instructor.

**775\*\* Teaching Music for Exceptional Learners G 3**

An analysis and concentrated study of materials and practices appropriate to teaching music for exceptional learners.

Sp Qtr. Prereq: Advanced undergrad standing and permission of instructor.

**777 Practicum in Teaching Music for Handicapped Learners U G 4-10**

Assignment to area schools and institutions for observation and music teaching experiences with groups of handicapped learners and cooperating teachers.

Su, Au, Wi, Sp Qtrs. 5-15 hrs per wk in schools or institutions. Prereq: Advanced undergrad standing and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**780 Ensembles**

Study and performance of repertoire determined by student's specific ensemble.

2 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor.

**780.01 Choral G 1,2**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs.

**780.02 Orchestral G 1,2**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs.

**780.03 Band G 1,2**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs.

**780.04 Chamber and Small Ensembles G 1,2**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs.

**780.05 Piano Accompanying Practicum G 1,2**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs.

**780.11 Opera Scenes G 1,2**

A performance ensemble class devoted to the rehearsing and performing of opera scenes; basic rehearsal and performing techniques for operatic literature.

Wi Qtr. 3 1.5-hr cl Prereq: 710 or permission of instructor, and admission by audition. Repeatable to a maximum of 24 cr hrs.

**780.12 Opera Performance G 2**

A performance ensemble class devoted to the rehearsing and performance of full-length operas/advanced rehearsal and performance techniques for operatic literature.

Au, Wi, Sp Qtrs. 5 2.5-hr cl. arr. Prereq: 710 and permission of instructor, and admission by audition.

Repeatable to a maximum of 24 cr hrs.

**780.15 Early Music Ensemble G 1,2**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs.

**780.20 African Performing Ensemble G 1**

Au, Wi Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Cross-listed in African-American and African Studies. Repeatable hrs includ cr hrs earned in AfAm&AST 780.20.

**780.21 Slavic Performing Ensemble G 1,2**

Wi, Sp Qtrs. Repeatable to a maximum of 24 cr hrs.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. H783 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC or College of the Arts or College of Education Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**786 Music Research Methods and Bibliography G 3**

Survey of the methods and materials for conducting research projects in today's interdisciplinary computerized environment.

Au Qtr. 3 cl. Prereq: Grad standing in music.

**789 Performance Practices in Sub-Saharan African Music G 3**

An examination of compositional choices and performance conventions in selected musical traditions from sub-Saharan Africa.

Au Qtr. 3 cl. Prereq: Grad standing in music and one of the following courses or equiv: AfAm&AST 101, or Music 251 or 672; or permission of instructor. Not open to students with credit for AfAm&AST 789. Cross-listed in African-American and African Studies.

**790 Problems in Vocal Music Education U G 1-5**

Study of problems encountered in the teaching and supervising of vocal music.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**791 Problems in Instrumental Music Education U G 1-5**

Study of problems encountered in teaching, supervising, and organization of the instrumental music program.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**792 Choral Problems U G 1-5**

Study of the problems encountered in developing choruses and church choirs.

Su Term 1, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**801 Applied Music (Principal)**

Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music.

**801.11 Piano G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.21 Voice G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.31 Violin G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.32 Viola G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.33 Cello G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.34 Double Bass G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.41 Flute G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.42 Oboe G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.43 Clarinet G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.44 Bass Clarinet G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.45 Saxophone G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.46 Bassoon G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.51 Horn G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.52 Trumpet G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.53 Trombone G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.54 Euphonium G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.55 Tuba G 2,4**

Repeatable to a maximum of 16 cr hrs.

**801.71 Percussion G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802 Applied Music (Major)**

A specialized and intense study of literature and techniques of performance.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: Placement exam.

**802.11 Piano G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.21 Voice G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.31 Violin G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.32 Viola G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.33 Cello G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.34 Double Bass G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.41 Flute G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.42 Oboe G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.43 Clarinet G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.44 Bass Clarinet G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.45 Saxophone G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.46 Bassoon G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.51 Horn G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.52 Trumpet G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.53 Trombone G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.54 Euphonium G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.55 Tuba G 2,4**

Repeatable to a maximum of 16 cr hrs.

**802.71 Percussion G 2,4**

Repeatable to a maximum of 16 cr hrs.

**803 Conducting**

A specialized and intense study of conducting techniques.

Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lab. Prereq: Placement exam. Open only to conducting majors in the MM curriculum.

**803.01 Choral G 4**

Repeatable to a maximum of 12 cr hrs.

**803.03 Band G 4**

Repeatable to a maximum of 12 cr hrs.

**810 Music Pedagogy**

A critical analysis of various methods, principles, practices, and materials current in teaching applied music.

**810.21^\* Vocal G 3**

An analysis of the principles and practices current in the teaching of voice, in voice.

Wi Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in voice.



**810.22\*\* Vocal Practicum G 3**

Observation of applied voice instruction, participation in and discussion of voice teaching, development of teaching skills and fluency of communications.

Sp Qtr. 2 hrs arr. Prereq: 615. Repeatable to a maximum of 6 cr hrs.

**810.30\*\* String Instrument G 3**

An analysis of the principles and practices current in the teaching of strings. Gillespie.

Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in string instruments.

**810.40\*\* Woodwind Instrument G 3**

An analysis of the principles and practices current in the teaching of woodwinds.

Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in woodwind instruments.

**810.50\*\* Brass Instrument G 3**

An analysis of the principles and practices current in the teaching of brass instruments.

Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in brass instruments.

**810.70\*\* Percussion Instruments G 3**

An analysis of principles and practices in the teaching of percussion instruments.

Au Qtr. 3 cl. Prereq: Music grad standing and a minimum of 6 cr hrs of applied study in percussion instruments, or permission of instructor.

**815\* Clinical Assessment and Training Methods for the Singing Voice G 3**

An interdisciplinary course in vocal pedagogy and speech-language pathology which explores methods within each discipline for assessing and training the singing voice.

Sp Qtr. 2 cl, 2 lab hrs. Prereq: Grad standing in music or sph/hrng (with credit for 741); or permission of instructor. Not open to students with credit for Sph/Hrng 815. Cross-listed in Speech and Hearing Science.

**818 Theories of Heinrich Schenker****818.01\*\* Foundations G 3**

Musical structural analysis of Schenker as expressed in his own writings; emphasis on his theories rather than on graphing techniques.

Au Qtr. 3 cl. Prereq: 621 or 622 or 623. Not open to students with credit for 818.

**818.02\*\* Analysis Practicum G 5**

Analysis of tonal music strictly following the theories and graphic notational conventions of Heinrich Schenker.

Wi Qtr. 2 1.5-hr cl. Prereq: 818.01 and grad standing in music.

**819\*\* Levels Theory after Schenker G 3**

Concentration on specific concepts of commentators and successors as distinct from Schenker's.

Sp Qtr. 3 cl. Prereq: 818. Not open to students with credit for 729.

**820 Music Theory****820.01 Pedagogy G 3**

The teaching of music theory in colleges and secondary schools.

Au Qtr. 3 cl. Prereq: Music grad standing. Not open to students with credit for 820.

**820.02\* Teaching Practicum G 3**

Evaluation and application of the most effective teaching methods and principles in teaching music theory.

Sp Qtr. 2 1.5-hr cl. Prereq: 820.01.

**823\*\* Seminar: Atonal Theory G 5**

A study of atonal set theory and serial theory as developed by Babbitt, Forte, Lewin, Rahn, and others.

Sp Qtr. 2 1.5-hr cl. Prereq: 623 or permission of instructor.

**824 Computer Applications in Music Research and Instruction**

2 1.5-hr cl.

**824.01\* Computer Applications in Music Research and Instruction I G 5**

The use of computers in music research and instruction; music data structures and programming routines for music research and instruction.

Au Qtr. Prereq: 621, 622, or 623, or equiv or permission of instructor. Not open to students with credit for 824.

**824.02\* Computer Applications in Music Research and Instruction II G 5**

Complex music data structures and programming routines for music research and instruction.

Wi Qtr. Prereq: 824, 824.01, or equiv. Not open to students with credit for 825.

**825\* Advanced Computer Applications in Music Research G 3**

The use of advanced computer programming techniques for research in music.

Sp Qtr. 2 cl. Prereq: 824.02. Repeatable to a maximum of 6 cr hrs.

**826\* Development of Music Theory I G 5**

A study of the principal treatises on music theory before 1400.

Au Qtr. 3 cl.

**827\* Development of Music Theory II G 5**

A study of the principal treatises on music theory from 1400 to 1700.

Wi Qtr. 3 cl.

**828\* Development of Music Theory III G 5**

Critical study of music and theory texts from 1700 to 1900.

Sp Qtr. 3 cl.

**829 Seminar: Contemporary Theories of Music G 3-5**

Critical examination of major contemporary theoretical viewpoints; concepts of theory construction; topics will vary each quarter offered.

Wi Qtr. 2 1.5-hr cl. Prereq: Music grad standing. Repeatable to a maximum of 20 cr hrs.

**831\*\* Advanced Studies in Counterpoint G 3**

Advanced counterpoint based on the polyphonic style of the 18th century; analysis and stylistic writing, including study of fugues, canons, and invertible counterpoint.

Sp Qtr. 3 cl. Prereq: 631.

**835 Composition III G 3-5**

Creative writing at an advanced level.

Su, Au, Wi, Sp Qtrs. Prereq: 2 qtrs of 635 or equiv. Repeatable to a maximum of 20 cr hrs.

**837 Composition with Electronic Media II G 3-5**

Advanced composition using electronically generated sound material.

Su, Au, Wi, Sp Qtrs. 15 cl. Prereq: 637. Repeatable to a maximum of 15 cr hrs.

**838 Seminar in Music Perception G 5**

Investigation and application of experimental techniques for measuring music perception and musical behavior, including a critical survey of recent experimental literature.

Sp Qtr. 3 1-hr cl. Prereq: Permission of instructor.

**839 Research Practicum in Music Perception G 3**

Supervised research in music perception with review of relevant theoretical and methodological literature.

Au, Wi, Sp Qtrs. Prereq: 838. Repeatable to a maximum of 6 cr hrs.

**847\* Development of Notation: 900-1600 G 5**

A survey of notational principles from Gregorian neumes through the mensural system of the Renaissance, with exercises in transcription.

Wi Qtr. 3 cl. Prereq. or concur: 640.

**850\*\* History of Performance Practices G 5**

A study of primary sources pertaining to contemporary attitudes and practices in the performance of music from the Middle Ages to the present. Atkinson.

Au Qtr. 3 cl.

**851\* Musical Sources and Historiography G 5**

A study of music historiography, supplemented by the examination of musical documents from each of the periods of music history.

Sp Qtr. 3 cl. Prereq: 786.

**852 Performance Literature**

Concentrated study of representative literature from each style period.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 752 and admission to DMA program.

**852.01 Piano G 3**

Repeatable to a maximum of 9 cr hrs.

**852.02 Voice G 3**

Repeatable to a maximum of 9 cr hrs.

**852.03 Strings G 3**

Repeatable to a maximum of 9 cr hrs.

**852.04\* Woodwinds G 3**

Repeatable to a maximum of 9 cr hrs.

**852.05\* Brass G 3**

Repeatable to a maximum of 9 cr hrs.

**860 Conducting Repertoire**

Au, Wi, Sp Qtrs. 2 2-hr cl. Open only to DMA conducting majors or PhD students or by permission of instructor.

**860.01 Band G 3**

Concentrated study of instrumentation and repertoire of bands in Western music from the standpoint of the conductor.

**860.02 Choral G 3**

Concentrated study of choral literature from the Renaissance to the present.

**860.03 Orchestral G 3**

Concentrated study of orchestral repertoire from Monteverdi through the present from the standpoint of the conductor.

**874\*\* Seminar: The Development of Music Education G 3,5**

The development of music education from the early Greek society to the present day tracing major trends and the influence of certain persons.

Sp Qtr. 3 or 5 cl. Prereq: Written permission of instructor.

**875\*\* Seminar: Psychological Factors in Music Education G 3,5**

A study of the psychological factors, theory, and research in the musical development of children and adolescents with implications for school music education programs.

Au Qtr. 3 or 5 cl. Prereq: 761.

**876\* Seminar: Evaluation and Measurement in Music Education G 3,5**

A study of the theory, principles, and techniques of evaluation and measurement in music education.

Au Qtr. 3 or 5 cl. Prereq: 761 and Psych 510.

**877\*\* Seminar: Social Factors in Music Education G 3,5**

A study of the social influences on music education and their relationship to school music programs and practices.

Wi Qtr. 3 or 5 cl. Prereq: 760.

**879\*\* Seminar: Music in Higher Education G 3,5**

The role of music in higher education historically and in contemporary times, including its philosophical bases, degree programs, and organizations.

Wi Qtr. 3 or 5 cl.

**885\* Fieldwork in Ethnomusicology G 5**

A study of the theory and practice of ethnomusicological fieldwork.

Sp Qtr. 2 1.5-hr cl.

**886\* Theories and Methods of Ethnomusicology G 5**

A study of scholarly approaches and research methods in ethnomusicology.

2 1.5-hr cl.

**888^ Topics in Russian Music G 5**

Selected problems in 19th- and 20th-century Russian music.

2 1.5-hr cl. Prereq: Grad standing in music or slavic. Not open to students with credit for 788. Repeatable to a maximum of 15 cr hrs.

**893 Individual Studies G 1-5**

Individual research projects not connected with the dissertation.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**894 Group Studies**

Su, Au, Wi, Sp Qtrs.

**894.01 Seminar in Music Theory G 3-5**

Repeatable to a maximum of 15 cr hrs.

**894.02 Seminar in Music Education G 3-5**

Repeatable to a maximum of 15 cr hrs.

**902 Applied Music (Major)**

Advanced study of music literature in performance including concert recital presentation.

Su, Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: Placement exam. Open only to students admitted to DMA program.

**902.11 Piano G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.21 Voice G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.31 Violin G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.32 Viola G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.33 Cello G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.34 Double Bass G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.41 Flute G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.42 Oboe G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.43 Clarinet G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.44 Bass Clarinet G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.45 Saxophone G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.46 Bassoon G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.51 Horn G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.52 Trumpet G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.53 Trombone G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.55 Tuba G 2,4**

Repeatable to a maximum of 32 cr hrs.

**902.71 Percussion G 2,4**

Repeatable to a maximum of 32 cr hrs.

**903 Advanced Conducting**

Study of advanced conducting technique and application to appropriate repertoire.

Au, Wi, Sp Qtrs. Prereq: Acceptance into the DMA conducting program.

**903.01 Band/Winds G 4**

Repeatable to a maximum of 8 cr hrs.

**903.03 Orchestral G 4**

Repeatable to a maximum of 8 cr hrs.

**950 Topical Research Seminar**

Research topic to be announced.

**950.01 Seminar in Musicology G 5**

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Repeatable to a maximum of 45 cr hrs.

**950.02 Seminar in Music Theory G 5**

Au, Wi, Sp Qtrs. 2 1.5-hr cl. Repeatable to a maximum of 45 cr hrs.

**970 Masters Project - Plan B G 2-6**

Research and practical investigations of selected topics for purposes of the Plan B Masters Project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing in music. Repeatable to a maximum of 6 cr hrs. Required of students enrolled in Master of Arts - Plan B program.

**995 Advanced Research Practicum G 1-5**

Utilization of research processes and creative techniques appropriate to the field of inquiry-analysis, survey, experimentation, historiography, philosophy.

Su, Au, Wi, Sp Qtrs. Prereq: 45 grad cr hrs and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**998 Research in Music: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research in Music: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Natural Resources

210 Kottman Hall, 2021 Coffey Road, 292-2265

**189 Work Experience in Natural Resources U 2**

Student must secure approval of instructor prior to employment (equivalent to 10 weeks full-time) and submit an evaluation by third Friday of quarter following work.

Su, Au, Wi, Sp Qtrs. Equiv of 10 wks employment. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

**201 Introduction to Environmental Science U 5**

Introduction to environmental science, the ecological foundation of environmental systems, and the ecological impacts of environmental degradation by humans.

Au, Wi Qtrs. 4 cl, 1 dis. Not open to students with credit for 100.

**203 Society and Natural Resources U 5**

Introduction to interactions between humans, natural resources, and ecosystems from a social science perspective.

Sp Qtr. 3 1-hr cl, 2 dis. Prereq: 201.

**222 Natural Resources Data Analysis U 5**

Natural resources applications of statistics to land management.

Au, Wi, Sp Qtrs. 4 cl, 1 3-hr lab. GEC course.

**232 Landscape Maintenance U 4**

Management of landscape plantings with special emphasis on transplanting, mulching, nutrition, pest control, pruning, physiological disorders and diagnosing plant problems.

Wi Qtr. 22-hr cl. Not open to students with credit for Hort or H&CS 232. Cross-listed in Horticulture and Crop Science.

**289 Natural Resources Practicum U 2**

Experience in the application of principles and techniques of environmental/natural resources problem solving.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in the School of Natural Resources and permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

**311 Foundations for Environmental Communications, Education and Interpretation U 3**

Foundational course that prepares students in ECEI for understanding the theoretical bases that relate and differentiate environmental communications, education, and interpretation.

Au Qtr. 2 1.5-hr cl. Prereq: 201 and 203 or permission of instructor. Course includes required field trips.

**320 Management of Fisheries U 3**

Fisheries resource management problems and programs including biological, economic, and social factors of local, national, and international importance.

Au, Wi Qtrs. 3 cl. Prereq: 201 and 203.

**321 Principles of Wildlife Management U 3**

Principles of wildlife management as derived from history and ecology.

Au Qtr. 3 cl. Prereq: 201 and 203.

**324 Natural Resources Photointerpretation U 3**

Principles and methods of photointerpretation for natural resources management.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 201 and 203. Not open to students with credit for Forestry 324.

**340 Concepts of Parks and Recreation U 3**

Examination of parks and recreation concepts including development, rationale, and frameworks for park and recreation systems in the United States.

Wi Qtr. 3 cl.

**355 Water Quality Management U 3**

Causes, consequences, and solutions of pollution in lakes, rivers, wetlands, and groundwater; analysis of the physical, chemical, and biological indicators of water quality.

Au, Sp Qtrs. 1 3-hr cl. Prereq: 201 and 203.

**367 The Making and Meaning of the American Landscape U 5**

Interpretation of the contemporary American landscape as the product of many interacting physical and sociocultural forces.

Au, Wi, Sp Qtrs. 3 cl, 2 1-hr rec. Prereq: English 110 or 111 or equiv. Not open to students with credit for Larch 202 or 367. Cross-listed in Landscape Architecture. VPA Admis Cond course. GEC second writing course (and arts and hums cultures and ideas BS only).

**400 Natural Resources Policy U 5**

Conceptual and historic development, implementation, and evaluation of resource policy.

Wi, Sp Qtrs. 4 cl, 1 rec. Prereq: 201 and 203. BER/GEC/LAR course.

**448 Natural Resources Law Enforcement U 4**

An examination of the law enforcement function in natural resources and recreation management. Prerequisite for acceptance to the Natural Resources Ranger Academy program.

Sp Qtr. 1 4-hr cl. Prereq: 201, 203 or permission of instructor.

**498 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable for different titled study tours only.

**498.01 Domestic U 1-15**

Repeatable.

**498.02 Foreign U 1-15**

Repeatable.

**510 Natural History of Ohio U G 5**

Field course emphasizing inter-relationship among physical and biological factors in various ecological settings; field techniques and identification skills used for research paper; teacher section offered.

Sp Qtr. 2 2.5-hr cl and Sat field trip.

**515 Interpretative Planning and Center Design U G 5****522 Wildlife Identification and Management U G 3**

Characteristics, life histories, and management systems for the major North American game wildlife.

Wi Qtr. 2 2-hr cl. Prereq: 321 or equiv.

**523 Management of Wildlife Habitat U G 3**

Principles and practices of ecosystem conservation and manipulation for game, non-game, and endangered wildlife.

Wi Qtr. 3 1-hr cl. Prereq: 321 or equiv.

**531 Environmental and Natural Resources Economics U G 5**

Economic analysis of the use and management of natural resources and of environmental policy.

Au, Sp Qtrs. 5 cl. Not open to students with credit for Agr Econ 531 or AED Econ 531. Cross-listed in Agricultural, Environmental, and Development Economics.

**540 Advanced Perspectives of Natural Resource Administration U G 5**

Advanced concepts and principles of agency purposes, policy processes, and planning strategies for natural resource land and/or program management.

Wi Qtr. 5 cl. Prereq: 400 or grad standing.

**567 Communicating Environmental and Natural Resources Information U 5**

Concepts, skills development, and practice in accessing and communicating information about the environment and natural resources to varied audiences; emphasis on written and oral communication.

Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: Second writing course and 15 cr hrs of nat res course work, or equivs. Not open to students with credit for 410. GEC/LAR course.

**H590 Honors Colloquium U 2**

Instruction in the preparation of research proposals and discussion of current research in natural resources.

Wi Qtr. 1 2-hr cl. Prereq: Jr standing in NRE honors program. Required of all NRE honors students. This course is graded S/U.

**595 Wilderness Leadership Education**

Affiliate program with the National Outdoor Leadership School (NOLS). Field studies and practice of wilderness expedition skills, leadership, group dynamics, safety, judgement, and environmental studies.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Approval of NOLS application. Specific content, location, quarter(s) of offering, and prerequisites vary. Contact department office for details. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**595.01 Wilderness Leadership Education - Term U 6**

Term - 4 weeks. Repeatable. Repeatable for different titled study tours only.

**595.02 Wilderness Leadership Education - Quarter U 15**

Quarter - 12 weeks. Repeatable. Repeatable for different titled study tours only.

**596 Environmental Field Studies**

Affiliate program with the School for Field Studies (SFS). Interdisciplinary studies and field research methods exploring ecological, socio-political, and economic aspects of environmental issues.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Approval of SFS application. Specific content, location, quarter(s) of offering, and prerequisites vary. Contact department office for details. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**596.01 Environmental Field Studies - Term U 6**

Term - 4 weeks. Repeatable. Repeatable for different titled study tours only.

**596.02 Environmental Field Studies - Quarter U 15**

Quarter - 12 weeks. Repeatable. Repeatable for different titled study tours only.

**597 Issues of the Contemporary World**

Prereq: Sr standing. GEC/LAR courses.

**597.02 Antarctic Marine Ecology and Policy U 5**

Historical and contemporary evaluation of Antarctic resource management and its scientific basis.

Au, Wi, Sp Qtrs. 3 1.5-hr cl. H597.02 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Sr standing. Prereq for H597.02: Sr standing and enrollment in an honors program. Not open to students with credit for Int Stds 597.02 or Zoology 597.02. Cross-listed in International Studies.

**598 Natural Resources Management Study Tour U 2-5**

Analysis and comparative studies of natural resources management program through on-site visits and interaction with professional managers.

Au, Wi, Sp Qtrs. 1-2 hr cl; field study tour. Prereq: Jr standing. Repeatable to a maximum of 10 cr hrs. Travel and subsistence costs will be borne by the student.

**606 Natural Resources Management U 5**

Integration of technical knowledge with social and institutional constraints as they relate to professions in resources management.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Sr standing and permission of instructor.

**607 Fundamentals of Geographic Information Systems U G 4**

Basic principles of geographic and land information systems and their use in spatial analysis and information management.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: Sr standing. Not open to students with credit for Geog 685; or 607 in C&R Plan, Civil En, Geod Sci, Geog, or Geol Sci. Cross-listed in City and Regional Planning, Civil Engineering, Geodetic Science, Geography, and Geological Sciences.

**610 Environmental Interpretation and Visitor Services U G 5**

Principles and practice in communicating with visitors in leisure and non-formal education settings.

Wi Qtr. 5 1-hr cl, 3 independent off-campus site visits and 1 2-day trip. Prereq: 567 or equiv. Not open to students with credit for 511.

**611\* Great Lakes Education Workshop U G 1-4**

Techniques and curricula for presenting interdisciplinary aspects of the oceans and Great Lakes in formal and nonformal education settings.

Su, Au, Wi, Sp Qtrs. 10 course hrs per cr hr, field trip. Prereq: Teaching certificate or sr standing. Repeatable to a maximum of 5 cr hrs. Offered frequently off-campus on request. Cross-listed with Education Teaching and Learning.

**613 Methods for Environmental and Ecological Education U G 5**

Experience centered course for environmental and ecological education including objective, instructional, and evaluative procedures appropriate for formal and nonformal settings.

Sp Qtr. 2 2.5-hr cl. Prereq: Sr or grad standing. Not open to students with credit for Ed-Sc&Ma 613.

**614\* Marine and Aquatic Education U G 3**

Overview of oceanic and Great Lakes resources, their roles in history, climate, commerce, and culture; examination of teaching materials for formal and informal settings.

Su, Wi Qtrs. 1 3-hr cl, field trip. Prereq: 20 cr hrs of social, physical, and/or biological sciences or teacher certification, and permission of instructor. Not open to students with credit for Ed-Sc&Ma 614. Cross-listed with Educational Studies. Travel and subsistence costs for winter field trip must be borne by students. Summer offering at Stone Lab.

**615 Skills for Environmental Communication U G 5**

Skills development and practice in communicating natural resources/environmental information through written and broadcast media.

Au Qtr. 3 2-hr cl. Prereq: 567 or grad standing.

**618 Environmental Pollution U G 4**

Problems, principles, causes, and control of pollution in the local, regional, and global environment; quantitative approaches to environmental problems in air, water, and land systems.

Wi Qtr. 4 cl. Prereq: Sr standing and 15 hrs of natural sciences. Not open to students with credit for Civil En 618; Mech Eng 618, or Zoology 618. Cross-listed in Civil Engineering.

**626 Field Techniques in Fisheries Management U G 5**

Methods of sampling, evaluation, and managing freshwater fish populations; techniques are compared and related problems discussed; actual field experience.

Au Qtr. 3 cl, 1 4-hr lab 4 overnight field trips. Prereq: 320.

**628 Introduction to Aquaculture U G 5**

An introduction to the physical, biological, and economic factors that influence the development of fish culture systems; current US hatchery practices will be compared with methods used elsewhere in the world.

Wi Qtr. 3 cl, 4-hrs lab. Prereq: 320.

**631 Arboriculture U G 5**

Integration of environmental factors and culture practices necessary to establish, grow, and maintain plant function in the landscape in an ethical, cost effective manner.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: Forestry 221 or Hort 234 or 435 and a 400 level course in Entomol or Plnt Path. Not open to students with credit for Hort 631. This course is available for EM credit.

**635 Forest Management U G 5**

Application of economic and planning principles to address natural resource management issues and problems; use of computer-based mathematical programming, simulation, and forest-wide planning models.

Sp Qtr. 5 cl. Prereq: Written permission of instructor. Required of forestry majors.

**640 Natural Resources Program Planning I U G 5**

Inventory and evaluation of natural resources for program planning with consideration of goals, objectives and actions, budgeting, and planning documents.

Au Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 340, 400.

**641 Natural Resources Program Planning II U G 3**

Application of concepts, strategies, and data from Natural Resources Program Planning I to a field planning exercise.

Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 640.

**642 Natural Resources Administration U G 5**

Organization and administration of parks and associated recreation areas and activities.

Sp Qtr. 5 1-hr cl. Prereq: 340, 400 or permission of instructor.

**643 Outdoor Recreation and Tourism by the Private Sector U G 4**

Factors influencing supply and demand for outdoor recreation and tourism facilities provided by the private sector; the feasibility study, liability, insurance, and other managerial concerns.

Sp Qtr. 4 cl. Prereq: 540 and Econ 200 or equiv.

**647 Wilderness Policy and Management U G 4**

Detailed study of policy processes, planning procedures, designation mechanics, utilization issues, and management programs for wilderness resources.

Wi Qtr. 4 cl. Prereq: 321 and 400 or 540 or equiv with permission of instructor.

**650 Water Resources Institutions and Policies U G 5**

Review and advanced analysis of Ohio, interstate, and federal institutions and policies which influence the use and management of water resources.

Sp Qtr. 2 2-hr, 1 1-hr cl arr. Prereq: 400 or concur or permission of instructor.

**653 Solid Waste Management U G 5**

Overview of the management of solid waste examination of policy, alternative strategies, and hierarchical decision-making.

Sp Qtr. 2 2.5-hr cl. Prereq: 201 and 203 or permission of instructor. Field trips required.

**656 Ecosystems of the World: Temperate, Boreal and High Latitude Ecosystems U G 5**

Intermediate course in ecology emphasizing structure-function relations at broad scales, incorporating soil development, geomorphology, climate, and human impact into analyses of major temperate, boreal, and polar ecosystems.

Wi Qtr. 1 2-hr cl and 2 1.5-hr cl. Prereq: Sr or grad standing; Plant Biology 413.01 or Zoology 413.01 or equiv; and 20 additional hrs in natural science or natural resources or permission of instructor. Not open to students with credit for Plant Biology 656. Cross-listed in Plant Biology.

**662 Wildlife Ecology Methods U G 5**

Methods used by professional wildlife ecologists to measure population characteristics and habitat quality for wild terrestrial vertebrates.

Sp Qtr. 2 cl, 2 3-hr labs, Sat field trips (1-2 weekend field trips). Prereq: 222 or equiv, 321, 522, 523, EEOB 413.01. Not open to students with credit for Zoology 662. Students will normally be wildlife management majors.

**675 Fate of Pollutants in Soils and Natural Waters U G 3**

Overview of source, modes of introduction, modes of transport, chemical and biological fate, and environmental impact of pollutants in soil-water environments.

Wi Qtr. 2 1.5-hr cl. Prereq: Two qtrs of chemistry and one qtr of biology or plnt bio. Not open to students with credit for Agronomy 675.

**684 Internships in Natural Resources Professions U G 0**

Internship (equivalent to 10 weeks of full-time employment) in natural resources professions arranged with cooperating natural resources or environmental agencies, organizations or industries.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in the School of Natural Resources and permission of instructor. Repeatable. Maximum of 6 quarters. This course is graded S/U.

**689 Professional Practice in Natural Resources U 4**

Preparation of a written report and delivery of a presentation based on internship employment in natural resources professions.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 684 and permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**690 Workshop in Environmental Education U G 3**

Problems of instruction in environmental education with consideration of both traditional approaches and current developments in content and methodology.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**691 Workshop in Environmental Management Education U G 1-2**

Identification of environmental problems and management alternatives with emphasis on related education and communications techniques; survey of related research; development of applied educational and communications strategies.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

**693 Individual Studies in Natural Resources U G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Group studies on the nature and management of natural resources encompassed in one of the following areas.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**700 Natural Resources Policy Analysis U G 5**

Frameworks of planning and analyzing contemporary natural resources policies; instructor and student critiques of legislation, forecasts, plans, and policy analyses.

Au Qtr. 2 2.5-hr cl. Prereq: 400 with permission of instructor or grad standing.

**715 Community Education for Environmental Issues U G 3**

Seminar study in activism, mass/group movements, and education for reempowerment/intervention with emphasis on community environmental issues.

Su Qtr. 1 3-hr cl. Prereq: Sr or grad standing. Maximum enrollment of 25. Experiential learning methods.

**716 Choices for the Environment U G 3**

Exploration of the process of information flow leading to individual decision-making and educating on environmental issues.

Au Qtr. 1 3-hr cl. Prereq: Jr or sr or grad standing. Experiential based learning course.

**725 Wetland Ecology and Management U G 5**

Biological, physical, chemical, and ecological aspects of major wetland ecosystems in North America; valuation, classification, and management of wetlands for biotic resources and water management.

Au Qtr. 1 5-hr cl. Prereq: Zoology 413.01 or permission of instructor.

**731\* Ecological Relationships of Forest Stands U G 3**

Ecological and physiological aspects of the forest-soil-site complex as it relates to forest tree establishment and growth.

Sp Qtr. 1 cl, 2 hrs arr.

**733 Successional Dynamics of Forests U G 5**

Analysis of past development of forest stands; examination of major processes causing changes over time in communities of trees.

Wi Qtr. 2 cl, 4-hr lab, and arranged 1 or 2 all-day field trips. Prereq: Sr or grad standing; permission of instructor. Taught in odd years.

**734 Forest Ecosystem Management U G 4**

Concepts and methods applied to managing forests across broad landscapes for biodiversity, multiple uses, and ecosystem integrity within the context of traditional forest management.

Au Qtr. 2 2-hr cl. Prereq: Sr or grad standing and permission of instructor.

**736 Public Forest and Lands Policy U G 4**

Explores fundamental and leading-edge concepts in U.S. public forest and lands policy. Emphasizes political, legal, and administrative issues of federal and state lands, especially forests.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing or Nat Res 400.

**750 Resolving Social Conflict G 4**

A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflicts.

Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in Business Administration: Interdisciplinary and City and Regional Planning.

**752 Environmental Science and Law U G 4**

Introduction to the common and statutory law and administration of environmental protection, with special emphasis on scientific and technological aspects.

Au Qtr. 2 2-hr cl. Prereq: Grad or jr or sr standing. Not open for credit applicable to the JD degree.

**756 Rehabilitation/Restoration of Ecosystems U G 3**

Intermediate-level course dealing with ecosystems drastically disturbed by human impacts and strategies employed to rehabilitate and restore them for long-term biological productivity and use.

Au Qtr. 2 1.5-hr cl. Prereq: Sr or grad standing; 201, 203 and 20 additional hrs in natural resources or natural science; or permission of instructor.

**760 Ecosystem Modeling U G 5**

Development and simulation of ecological models for natural resource/ecosystem management; conceptual and symbolic models, simulation techniques on main frame and microcomputers.

Wi Qtr. 5 cl. Arr. Prereq: Math 151 and Zoology 413.01 or equiv.

**780 Characteristics, Management, and Environmental Impact of Organic Wastes U G 3**

Survey of organic wastes; their production, characteristics, treatment, utilization, environmental impact, and regulation.

Wi Qtr. 2 1.5-hr cl. Prereq: Sr or grad standing and at least 20 hrs of chemistry and biology. Not open to students with credit for Agronomy 780.

**797 Interdepartmental Seminar U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Repeatable.

**798 Current Topics in Environmental Science and Engineering U G 1**

Seminar course which presents current research findings on environmental quality and pollution control.

Au, Sp Qtrs. 1 cl. Prereq: Grad standing in eng, sci, natres, agr; or permission of instructor. Not available for simultaneous credit as Civil En 798. Repeatable to a maximum of 3 cr hrs. Cross-listed in Civil Engineering.

**800 Research in Natural Resources G 3**

The use of science and research to address natural resource problems; development of a thesis proposal.

Au Qtr. 2 1.5-hr cl. Prereq: Grad standing. This course is graded S/U.

**810\*\* Case Studies and Evaluation of Environmental Communication G 5**

Case studies in effectiveness of environmental communication and practice in evaluation of various communication techniques associated with a current environmental issue.

Au Qtr. 1 3-hr cl. Prereq: Grad standing.

**814\* Earth Systems Education G 3**

Pedagogical philosophy and scientific justification of teaching interdisciplinary environmental sciences as a study of the earth.

Au Qtr. 1 3-hr cl. Prereq: Grad standing and at least 40 credit hours (UG) across two or more science disciplines. Two independent field excursions to local exemplary ESE classrooms. Designed for K-16 science teachers and non-formal environmental educators.

**835 Ecosystem Management Policy G 4**

Theory and practice of integrating natural and social science for managing watersheds, forests, and regions. Foundations, adoption, and potential future for this emerging natural resources paradigm.

Au Qtr. 2 2-hr cl. Prereq: Grad standing.

**841\* Outdoor Recreation Behavior G 3**

Analysis of theories related to understanding outdoor recreation behavior of individuals, social groups, and societal aggregations, and implications for managing recreation settings.

Wi Qtr. 2 1.5-hr cl. Prereq: Grad standing or permission of instructor.

**851 Human Dimensions Theory Building in Natural Resources G 4**

Explores fundamental concepts in human dimensions theory building related to natural resources. Bridges qualitative and quantitative research approaches, applied to developing a practice thesis proposal.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing.

**861 Geographic Information System Institutions G 4**

Institutional, legal, economic, and social aspects of geographic and land information system development in government and private organizations.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing and permission of instructor.

**880 Natural Resources Seminar G 1**

Required of all graduate students in natural resources.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Grad standing. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**893 Advanced Individual Studies G 1-5**

Individual studies in selected areas not otherwise offered in natural resources.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Not for use by PhD candidates who have passed the general examination. Not more than 10 hrs of any 693 and/or any 893 will apply toward the master's degree. Repeatable. This course is graded S/U.

**894 Advanced Group Studies G 2-5**

Advanced group studies in the nature and management of natural resources.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**897 Research Proposal Colloquium G 1**

A colloquium for graduate students to present their thesis proposals begun in Nat Res 800.

Sp Qtr. 1 2-hr cl. Prereq: Grad standing. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**985 Research Paradigms G 5**

An examination of research paradigms and techniques used in the disciplines involved in natural resource science and management.

Au Qtr. 5 cl. Prereq: PhD standing or permission of instructor. Required of all OoAK PhD students in Natural Resources.

**997 Advanced Seminar in Natural Resources G 1**

Advanced seminar on current topics in Natural Resources science and management.

Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 3 or hrs. Required of all students seeking the OoAK PhD in Natural Resources. This course is graded S/U.

**999 Research G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Naval Science

110 Converse Hall, 2121 Tuttle Park Place, 292-6015

The sequence of naval science courses is the same for all officer candidate students for the first academic year. Officer candidate students accepted into the Marine Corps Option will have curriculum variations commencing with their second year. Additionally, some candidates may be required to complete courses in American military affairs, national security policy studies, mathematics, and/or the physical sciences. Descriptions of the course requirements for each candidate classification (scholarship/college program) may be obtained from the Department of Naval Science. Naval Science courses are open to all students in good standing.

Initial enrollment in the NROTC Program may be completed by scheduling Naval Science 111 during Autumn Quarter registration. Completion of naval science and degree requirements may lead to a commission in the U.S. Navy or the U.S. Marine Corps.

Normal sequence of Naval Science courses is as follows:

First Year:

All candidates—111, 121, 131

Second Year:

Navy candidates—211, 221, 231

Marine candidates—351, 352, 231

Third Year:

Navy candidates—311, 321, 331

Marine candidates—451, 452, 353

Fourth Year:

All candidates—411, 421, 431

**111 Survey of Naval Science U 3**

An introduction to and survey of disciplines peculiar to naval science including a discussion of naval tasks and missions, regulations, customs, traditions, and organizational relationships.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Enrollment in NROTC Unit or permission of instructor. Students enrolling in this course are to contact the Naval Science Department (292-6015) to receive information about an orientation program.

**121 Seapower and Maritime Affairs U 3**

An analysis of seapower and maritime affairs as related to the naval forces of the United States.

Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 111 or permission of instructor.

**131 Naval Weapons Systems U 3**

Theoretical presentation of fundamental weapons concepts including electromagnetic principles, feedback controls, and basic ballistics.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 121 or permission of instructor.

**211 Naval Engineering U 3**

Study of fundamental thermodynamics, conventional and nuclear ship propulsion systems.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 131 or permission of instructor.

**221 Naval Weapons and Engineering U 3**

This course completes naval engineering study then transitions to applications of naval weapons systems.

Wi Qtr. 3 hr lec, 1 2-hr lab. Prereq: 211 or permission of instructor.

**231 Introduction to Naval Leadership and Management U 2**

Introduction to leadership principles and management theory as they relate to a junior officer.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 221 or permission of instructor.

**311 Naval Operations U 4**

An introduction to fleet operations, tactics, naval communications, and Coast Guard rules of the road.

Au Qtr. 2 2-hr cl, 1 2-hr lab.

**321 Piloting U 4**

A study of piloting vessels at sea including the determination of position by dead reckoning, visual bearings, and electronic methods.

Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 311 or permission of instructor.

**331 Naval Operations and Leadership U 3**

A study of fleet operations and the leadership and administrative roles of the junior officer in these operations.

Sp Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 321 or permission of instructor.

**351\* Evolution of the Art of War, Part I U 3**

A study of the evolution of weapons and tactics, illustrating the principles and variables of war used in certain battles from Alexander through the Prussian war.

Au Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 131 or permission of instructor.

**352\* Evolution of the Art of War, Part II U 3**

A continuation of the study of evolution of the art of war from the age of Mahan through the present day.

Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 351 or permission of instructor.

**353 Modern Basic Military Strategy and Tactics U 1**

A survey of modern strategic and tactical principles, and current military developments.

Sp Qtr. 1 2-hr sem. Prereq: Permission of instructor.

**411 Joint Naval Warfare U 2**

Introduction to the fundamental concepts that govern joint warfare in the modern American military establishment.

Au Qtr. 2 1-hr cl, 1 2-hr lab.

**421 Military Law U 2**

A seminar study of issues related to military law and the UCMJ.

Wi Qtr. 2 cl, 1 2-hr lab.

**431 Naval Leadership U 2**

A seminar study of naval leadership and military ethics.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 421.

**451\*\* Amphibious Warfare, Part I U 3**

The history of amphibious warfare and its development from the battle of Marathon through the Marshalls Campaign.

Au Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 131 or permission of instructor.

**452\*\* Amphibious Warfare, Part II U 3**

A study of the doctrinal techniques and present concepts of amphibious warfare from the Marianas Campaign through present day.

Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 451 or permission of instructor.

## Near Eastern Languages and Cultures

203 Botany and Zoology Building, 1735 Neil Avenue, 292-9255

**241 The Culture and Cultures of the Middle East U 5**

Introduction to the culture of the Middle East as lived in its villages, towns, and cities.

Au, Sp Qtrs. 2 2-hr cl. Not open to students with credit for Anthrop 241. Cross-listed in Anthropology. GEC arts and hums cultures and ideas course.

**271 Sacred Texts of the Near East U 5**

An introductory survey of the sacred texts of the Near East: Egyptian and Mesopotamian, the Bible, the Avesta, Hellenistic Gnostic literature, and the Qur'an.

Au Qtr. 5 cl. GEC arts and hums lit course.

**272 Masterpieces of Near Eastern Literatures in Translation U 5**

An introduction to major works of the Arabic, Persian and Turkish literary tradition from the sixth century to the present.

Wi Qtr. 5 cl. Taught in English.

**294 Group Studies U 1-5**

Special topics to be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs.

**311 Rebuilding the Tower of Babel: Language, Diversity, History and Ideology U 5**

A critical study of some of the mechanisms shaping language evolution, examining a number of linguistic, historical, ideological, and cultural issues. Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for Linguist 311 or 385. Cross-listed in Linguistics. GEC arts and hums cultures and ideas course.

**341 Islam in the United States U 5**

An examination of the main elements of Islamic belief as well as particular characteristics of each major Islamic group in the United States. Sp Qtr. 2 2-hr cl. GEC arts and hums cultures and ideas course.

**344 The Middle East in the Media U 5**

Examination of contemporary Middle Eastern cultures through critical evaluation of the media which inform our understanding of international politics.

Wi Qtr. 2 2-hr cl. Prereq: English 110 or 111. GEC arts and hums cultures and ideas course.

**351 Introduction to Islam U 5**

Examination of Islam as a world religion, enabling an understanding of its major tenets and beliefs as they are envisioned by insiders and outsiders. Wi Qtr. 2 2-hr cl. Prereq: English 110 or 111. GEC arts and hums cultures and ideas course.

**370 Mythology of Ancient Egypt and Mesopotamia U 5**

An introductory comparative survey of the mythology of ancient Egypt and Mesopotamia.

Sp Qtr. 2 2-hr cl. Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

**371 Songs of Kings and Lovers: Literature of the Ancient Near East U 5**

Examination of ancient Near Eastern literature and tools for appreciating it; focus on non-mythical Mesopotamian and Egyptian genres such as love poetry and wisdom literature.

2 2-hr cl. Prereq: English 110 or 111. GEC arts and hums lit course.

**372 Literatures and Cultures of the Islamic World U 5**

A survey of the Islamic world by way of literature and culture. 2 2-hr cl. Prereq: English 110 or 111 or equiv. GEC arts and hum lit course.

**603 Grammar of Selected Ancient Near Eastern Languages U G 5**

Fundamentals of grammar and reading in ancient Near Eastern languages (language of study to be announced, e.g., Egyptian, Coptic, Sumerian, Babylonian, Northwest Semitic dialects, Syriac).

Wi, Sp Qtrs. 5 cl. Prereq: Knowledge of a Semitic language or permission of instructor. Repeatable to a maximum of 20 cr hrs. Taught in English.

**611 Comparative Semitics U G 5**

An introduction to the study of the comparative grammar of the Semitic languages.

Wi Qtr. 5 cl. Prereq: Permission of instructor.

**630 Ugaritic U G 5**

Introduction to the language and literature of Ugaritic; readings in the Ugaritic mythological literature.

Sp Qtr. 5 cl. Prereq: Permission of instructor.

**634 Sumerian**

Examination of the basics of Sumerian grammar; introduction to a variety of literary and non-literary texts and genres.

**634.01 Sumerian I U G 5**

Explanation and discussion of grammatical or literary topics followed by the study of elementary Sumerian texts to develop practical reading skills.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**634.02 Sumerian II U G 5**

Reading texts in the original cuneiform script and understanding them within their historical and generic contexts.

Sp Qtr. 2 2-hr cl. Prereq: 634.01 or permission of instructor.

**635 Akkadian**

Examination of the basics of Akkadian grammar; introduction to a variety of literary and non-literary texts and genres.

**635.01 Akkadian I U G 5**

Explanation and discussion of grammatical or literary topics followed by the study of elementary Akkadian texts to develop practical reading skills.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**635.02 Akkadian II U G 5**

Reading texts in their original cuneiform script and understanding them within their historical and generic contexts.

Sp Qtr. 2 2-hr cl. Prereq: 635.01 or permission of instructor.

**642 Representing the Middle East in Film U G 5**

Examination of the discourses of orientalism using film as the primary medium of expression and discussion.

Au, Wi Qtrs. 2 2-hr cl. Prereq: Permission of instructor.

**645 Contemporary Issues in the Middle East U G 5**

Intensive examination of contemporary issues in the Middle East by applying an interdisciplinary approach.

Sp Qtr. 2 2 hr cl. Prereq: Int Stds 245 or jr standing. Not open to students with credit for Int Stds 645. Cross-listed in International Studies.

**646 Colonial Cities in Postcolonial Memory: The Politics of Urban Development in the Near East U G 5**

Introduction to colonial and postcolonial studies through a comparative examination of various cities that developed in the Near East during the late nineteenth century.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor.

**648 Studies in Orality and Literacy U G 5**

Examination of major theories of writing and of oral composition and transmission, in juxtaposition to case material deriving from a variety of Middle Eastern cultures.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**671 Canon and Communities in the Near East U G 5**

Investigation of the process by which Near Eastern sacred texts (Bible, Qur'an, and others) become sacred and the interaction between texts and communities holding them sacred.

Au Qtr. 5 cl.

**672 Poetry and Politics in the 20th-Century Mediterranean U G 5**

Exploration of several poets and poetic traditions around the Mediterranean in relation to modern political struggles: resistance to fascism; dilemmas of imperialism and underdevelopment.

Wi Qtr. 2 2-hr cl. Prereq: English 110 or 111, or grad standing.

**692 Workshop U G 6**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su Qtr. Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable to a maximum of 18 cr hrs.

**694 Group Studies U G 1-5**

Special topics to be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

**998 Research in Near Eastern Languages and Cultures G 1-10**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

## Neuroscience Department

4068 Graves Hall, 333 West 10th Avenue, 688-8237

**693 Individual Studies in Field of Neuroscience Department U P G 2-6,12,18**

Designed to enable the student to pursue a minor investigation in the field of neuroscience department.

Su, Au, Wi, Sp Qtrs. 1 month, offered all months. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Repeatable 24 hrs for professional credit. This course is graded S/U.

**716 Human Neurobiology G 7**

Designed to acquaint a graduate student with a basic knowledge of human neuroanatomy.

Sp Qtr. Arr. Prereq: Permission of instructor. Not open to students with credit in CBN&Anat 716 or Anat&ME 716. Cross-listed in Anatomy and Medical Education.



**723 Cellular and Molecular Neurobiology G 5**

Introduction to cellular components of nervous system, cell and molecular biology of nervous tissue, membrane properties and function in neural cells, brief overview of nervous system development.

Au Qtr. 2 2-hr lectures. Prereq: Permission of instructor. Not open to students with credit for Neurosci 723. Cross-listed in Neuroscience.

**724 Neurophysiology G 3**

Interdisciplinary approach to the physiology and neurobiology of the nervous system.

Au Qtr. 2-4 cl. Prereq: Permission of instructor. Not open to students with credit for Neurosci 724. Cross-listed in Neuroscience.

**725 Structure and Function of the Nervous System G 3**

Interdisciplinary approach to the anatomy, neurobiology, physiology, and biochemistry of the nervous system.

Sp Qtr. 2-4 cl. Prereq: Permission of instructor. Not open to students with credit for Neurosci 725. Cross-listed in Neuroscience.

**726 Behavioral Neuroscience G 5**

Concepts in behavioral neuroscience (motivation, cognition, development, aging, sensory systems, and homeostasis).

Su Qtr. 2 2-hr cl. Prereq: 725 or permission of instructor. Not open to students with credit for Neurosci 726. Cross-listed in Neuroscience.

**790\* Developmental Neurobiology G 3**

Interdisciplinary approach to the development of neural cells and the formation and maturation of vertebrate and invertebrate nervous systems.

Sp Qtr. 2 1.5-hr cl. Prereq: Neurosci 723, 724 and 725, or permission of instructor. Not open to students with credit for CBN&Anat 790. Cross-listed in Neuroscience.

**797 Seminar Topics in Neuroscience Department G 1**

Selected topics in current neuroscience department research.

Su, Au, Wi, Sp Qtrs. 1 hr cl. Prereq: Grad standing and permission of instructor. Not open to students with credit for Neurosci 797. Repeatable to a maximum of 24 cr hrs. Cross-listed in Neuroscience. This course is graded S/U.

**800\* Molecular Neurobiology G 3**

Survey of recent advances in the understanding of the structure and function of molecules known to be of key importance in the nervous system.

Sp Qtr. 3 1-hr cl. Prereq: Permission of instructor. Not open to students with credit for Neurosci 800. Cross-listed in Neuroscience.

**850 Seminar Topics in Neuroscience Department G 1**

Discussions of research in progress and reports from the literature of current neuroscience problems.

Su, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**911 Advanced Studies in Field of Neuroscience Department**

Prereq: Physiol 602 or 608 or Phys&Cb 602 or 608, or equiv with written permission of instructor.

**911.05 Neurobiology G 3,5**

Advanced study of a particular system or systems in the central nervous system, including literature perusal.

Not open to students with credit for CBN&Anat 911.05. Repeatable to a maximum of 30 cr hrs.

**911.07 Synaptic Organization of the Nervous System G 3,5**

Use of the electron microscope to define and analyze synaptic circuits within the central nervous system.

Not open to students with credit for CBN&Anat 911.07. Repeatable to a maximum of 30 cr hrs.

**911.09 Instrumentation and Techniques in Experimental Neurobiology G 3,5**

Practical experience in learning techniques utilized in neuroanatomical research problems.

Not open to students with credit for CBN&Anat 911.09. Repeatable to a maximum of 30 cr hrs.

**911.15 Oral-Sensation and Movement G 3**

Neurobiology of oral sensation and movement; focus on advanced physiology, anatomy, and pharmacology of neural systems regulating jaw functions.

Su Qtr. 1 2.5-hr cl. Prereq: Neurosci 723, 724 and 725, or permission of instructor. Not open to students with credit for CBN&Anat 911.15. Enrollment limited to 4-8 students.

**999 Research in Neuroscience Department G 1-15**

Research in neuroscience department.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in neuro sc and permission of instructor. Repeatable to a maximum of 180 cr hrs. Repeatable. This course is graded S/U.

**Neuroscience Graduate Studies Program**

4072 Graves Hall, 333 West 10th Avenue, 292-2379

Organ System Physiology

See Physiology 601 and 602.

Sensory Psychobiology

See Psychology 626.

Neurobiology

See Zoology 632.

Psychopharmacology

See Pharmacology 824.

Neurochemistry

See Medical Biochemistry 825.

**693 Individual Studies in Neuroscience U G 2-7**

Designed to enable the student to pursue a minor investigation in the neuroscience field or laboratory of choice.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 28 cr hrs. This course is graded S/U.

**723 Cellular and Molecular Neurobiology G 5**

Introduction to cellular components of nervous system, cell and molecular biology of nervous tissue, membrane properties and function in neural cells, brief overview of nervous system development.

Au Qtr. 2 2-hr lectures. Prereq: Permission of instructor. Not open to students with credit for Neuro Sc 723. Cross listed in Neuroscience Department.

**724 Neurophysiology G 3**

Interdisciplinary approach to the physiology and neurobiology of the nervous system.

Au Qtr. 2-4 cl. Prereq: Permission of instructor. Not open to students with credit for Neuro Sc 724. Cross listed in Neuroscience Department.

**725 Structure and Function of the Nervous System G 8**

Interdisciplinary approach to the anatomy, neurobiology, physiology, and biochemistry of the nervous system.

Sp Qtr. 2-4 cl. Prereq: Permission of instructor. Not open to students with credit for Neuro Sc 725. Cross-listed in Neuroscience Department.

**726 Behavioral Neuroscience G 5**

Concepts in behavioral neuroscience (motivation, cognition, development, aging, sensory systems, and homeostasis).

Su Qtr. 2 2-hr cl. Prereq: 725 or permission of instructor. Not open to students with credit for Neuro Sc 726. Cross-listed in Neuroscience Department.

**790\* Developmental Neurobiology G 3**

Interdisciplinary approach to the development of neural cells and the formation and maturation of vertebrate and invertebrate nervous systems.

2 1.5-hr cl. Prereq: Neurosci 723, 724 and 725, or permission of instructor. Not open to students with credit for Anat& Me 790, Neuro Sc 790 or Cbn&Anat 790. Cross-listed in Anatomy and Medical Education and Neuroscience Department.

**797 Seminar Topics in Neuroscience G 1**

Selected topics in current neuroscience research.

Su, Au, Wi, Sp Qtrs. 1-2 hr cl. Prereq: Grad standing and permission of instructor. Not open to students with credit for Neuro Sc 797. Repeatable to a maximum of 24 cr hrs. Cross-listed in Neuroscience Department. This course is graded S/U.

**800\* Molecular Neurobiology G 3**

Survey of recent advances in the understanding of the structure and function of molecules known to be of key importance in the nervous system.

Sp Qtr. 3 1-hr cl. Prereq: Permission of instructor. Not open to students with credit for Neuro Sc 800. Cross-listed in Neuroscience Department.

**911 Advanced Studies in Neuroscience**

Prereq: Physiol 602 or 608 or Phys&Cb 602 or 608, or equiv with written permission of instructor.

**911.26 Advanced Topics in Integrative Neurophysiology G 3**

In-depth presentation of the theory and concepts of neural networks and microcircuits.

2 1.5-hr cl. Not open to students with credit for Phys&Cb 911.26 or Physiol 911.26. Cross-listed in Physiology and Cell Biology.

**999 Research in Neuroscience G 1-15**

Research leading to the PhD degree in neuroscience.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in Neuro GSP and permission of instructor. Repeatable. Maximum of 180 cr hrs. This course is graded S/U.

**Nuclear Engineering**

1081 Robinson Laboratory, 206 West 18th Avenue, 292-8519

**294 Group Studies in Nuclear Engineering U 1-5**

Special group studies of a selected area of nuclear engineering not provided in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**505 Introduction to Nuclear Science and Engineering U G 3**

Discussion of nuclear energy and nuclear radiation; sources, methods of utilization, and projections for future engineering uses.

Au, Sp Qtrs. 2 1.5-hr cl. Prereq: Math 255 or 415 and Physics 133, or permission of instructor. Not open to students with credit for Mech Eng 505. Cross-listed in Mechanical Engineering.

**606 Radiological Safety U G 3**

General principles of radiation, radioactivity, and protection methodology with emphasis on approved operating, handling, and waste disposal procedures, and regulations and biological interactions.

Au Qtr. 2 2-hr cl.

**641 Nuclear Engineering Measurements U G 2**

A theoretical and experimental study of the principles of radiation and reactor measurements.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 505, and Mech Eng 570 or Physics 516 or permission of instructor. Not open for grad cr to graduate students majoring in Nuclear Engineering.

**694 Group Studies in Nuclear Engineering U G 1-5**

Special group studies of a selected area of nuclear engineering not provided in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**707 Numerical Methods in Particle Diffusion, Heat Transfer, and Radiation Transport U G 3**

Computer solutions of neutron diffusion, heat conduction, and radiation transport based on finite difference methods using marching, iterative, and direct solution schemes.

Wi Qtr. 2 1.5-hr cl. Prereq: 605 or 708, or Math 512 or Mech Eng 510, Cptr/Inf 541, and Eng Graph 200. Not open to students with credit for Mech Eng 707. Cross-listed in Mechanical Engineering.

**708 Reactor Theory G 4**

Methods for the design and analysis of nuclear reactor cores. Covers both time-dependent and steady state analysis.

Wi Qtr. 2 2-hr cl. Prereq: 505 or equiv. Required course.

**716 Probabilistic Reliability and Safety Analysis U G 3**

Modeling techniques for probabilistic reliability and safety analysis of large process systems such as found in nuclear, chemical and mechanical systems.

Sp Qtr. 2 1.5-hr cl. Prereq: Grad standing in nucl or mech eng or permission of instructor. Not open to students with credit for Mech Eng 716. Cross-listed in Mechanical Engineering.

**720 Reactor Dynamics and Control U G 3**

Nuclear reactor and nuclear reactor system operation; control system performance requirements and control mechanisms; automatic control systems and their performance with transient and with steady state operation.

Sp Qtr. 3 1.5-hr cl. Prereq: 605 or 708.

**735 Power Plant Operations I U G 3**

Introduction to power plant systems, regulatory requirements, and integrated plant operations.

Wi Qtr. 2 1.5-hr cl. Prereq: 505 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**736 Nuclear Power Plants U G 3**

A study of thermal and mechanical design aspects and economics of nuclear power plants and processes. The thermodynamics of operating nuclear power plants (BWR and PWR) are emphasized.

Wi Qtr. 2 1.5-hr cl. Prereq: 505 and Mech Eng 501 or 500 with permission of instructor. Not open to students with credit for 636 or Mech Eng 636 or 736. Cross-listed in Mechanical Engineering.

**737 Heat Transfer Applications in Nuclear Reactor Systems U G 3**

The heat transfer applications in nuclear reactor systems include but are not limited to: heat transfer in PWR and BWR fuel rods, coolant, and reactor internals.

Sp Qtr. 2 1.5-hr cl. Prereq: 636 or 736, or Mech Eng 636 or 736, and Mech Eng 510 or 500 with permission of instructor. Not open to students with credit for 637 or Mech Eng 637 or 737. Cross listed in Mechanical Engineering.

**742 Nuclear Radiations and Their Measurement U G 3**

A theoretical and experimental study of nuclear radiation sources, interactions with matter, and detection.

Wi Qtr. 2 1.5-hr cl, 1 3-hr lab. Prereq: 605 or 708, 606, or permission of instructor.

**743 Nuclear Radiations and Their Shielding U G 3**

A theoretical and experimental study of nuclear radiation, interactions with matter, and shielding.

Sp Qtr. 2 1.5-hr cl, 1 3-hr lab. Prereq: 742.

**744 Nuclear Reactor Laboratory U G 3**

An experimental study of nuclear reactor operating characteristics and fundamental concepts of reactor design.

Su Qtr. 1 cl, 1 4-hr lab. Prereq: 705 or 708, 720, and 742.

**745 Power Plant Operations II U G 3**

Provides experience with integrated plant operations at a nuclear power plant simulator.

Sp Qtr. Arr. Prereq: 735 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**766 Nuclear Engineering Design U G 3**

Practice in the analysis and design of nuclear systems and the use of nuclear engineering principles.

Au Qtr. 1 cl, 2 2-hr lab. Prereq: 605 or 708, and 743.

**771 Radioactive Waste Management U G 3**

Overview of radioactive waste management. Covers waste categories, sources, treatment and disposal methods, minimization, transportation and current research topics.

Au Qtr. Prereq: 505 or 606 or permission of instructor. Cross-listed in Civil Engineering.

**776 Nuclear Fuel Cycles U G 3**

A study of the production, utilization, waste disposal, safeguards, and economic aspects of nuclear fuel cycles of importance in nuclear power technology.

Au Qtr. 2 1.5-hr cl. Prereq: 505 and 636 or 736.

**793 Individual Studies in Nuclear Engineering U G 1-10**

Affords the qualified student the opportunity for independent reading, study, or laboratory work in a specialized field of interest.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**845 Advanced Laboratory Studies G 1-6**

Experimental treatment of advanced nuclear engineering concepts.

Su, Au, Wi, Sp Qtrs. Prereq: 743 or 744, and permission of instructor.

**865 Neutron Slowing Down and Thermalization G 3**

Neutron slowing down in infinite and finite media, thermal spectrum calculations, and cell calculations in heterogeneous core lattices.

Sp Qtr. 3 1-hr cl. Prereq: 605 or 708, and Math 512 or equiv with permission of instructor. Not open to students with credit for 765.

**880 Advanced Topics**

An advanced course of study for special topics in nuclear engineering; topics will be announced each quarter.

Arr. Prereq: Permission of instructor. Offered as demand warrants.

**880.02 Reactor Kinetics, Dynamics and Controls G 1-3**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**880.03 Reactor Design G 1-3**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**880.04 Fuel Management G 1-3**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**880.05 Radiation Effects G 1-3**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**880.06 Radiation Transport and Shielding G 1-3**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**880.08 Nuclear Instrumentation G 1-3**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**880.09 Special Studies in Radioactive Waste Management G 1-3**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**881 Nuclear Engineering Seminar G 1**

Current topics in nuclear engineering.

Au, Sp Qtrs. 1 cl. Prereq: Grad standing in nucl en. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies in Nuclear Engineering G 1-5**

Special group studies of a selected area of nuclear engineering not provided in other courses.

Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**999 Research in Nuclear Engineering G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Nursing

120 Newton Hall, 1585 Neil Avenue, 292-4041

**H100 Nursing Honors Survey U 1**

Introduction to the University community, the College of Nursing and the profession of nursing. Emphasis on strategies for success resources and procedures.

Au Qtr. 2 cl. Prereq: Enrollment in the College of Nursing. This course will be taken in lieu of Univ Col 100 by students directly enrolled as freshman students in the College of Nursing.

**293 Individual Studies in Nursing U 1-8**

Individual investigation of selected areas in introductory nursing studies. Su, Au, Wi, Sp Qtrs. Prereq: 1st or 2nd year standing in nursing and written permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

**294 Group Studies in Nursing U 2-6**

Selected topics in Nursing.

Su, Au, Wi, Sp Qtrs. Prereq: 1st or 2nd yr standing in nursing, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**301 Foundational Nursing Concepts for Health Promotion and Restoration across Lifespan Cultures and Settings**

Introduction to the foundations of nursing and the skills required in the provision of nursing care.

**301.01 Foundational Nursing Concepts for Health Promotion and Restoration across Lifespan Cultures and Settings I U 6**

Introduction to the profession, nursing process, and natural history model for disease as a framework for disease prevention, health promotion and restoration across the life span.

Au Qtr. 4 cl, 4 lab, 4 fld exp and 2 sem. Prereq: Soph standing in the College of Nursing; concur 385.01.

**301.02 Foundational Nursing Concepts for Health Promotion and Restoration across Lifespan Cultures and Settings II U 6**

Assessment of health and nursing interventions to maintain or restore health or prevent disease using the natural history model. Additional focus on the health care delivery system.

Wi Qtr. 4 cl, 4 lab, 4 clinical and 2 sem. Prereq: 301.01; concur 385.02.

**301.03 Foundational Nursing Concepts for Health Promotion and Restoration across Lifespan Cultures and Settings III U 6**

Assessment of health and nursing interventions to maintain or restore health or prevent disease using the natural history model. Additional focus on political processes that affect health care delivery.

Sp Qtr. 4 cl, 4 lab, 4 clinical and 2 sem. Prereq: 301.02; concur 385.03.

**302 Transition into Baccalaureate Nursing U 5**

Provides the framework for transition for registered nurses pursuing a baccalaureate degree in nursing.

Au Qtr. 4 cl, 1 hr independent study. Prereq: Admission to the College of Nursing, Registered Nurse status. Required in the Bachelor of Science in Nursing degree program for Registered Nurse students.

**H320 Honors Seminar****H320.01 Honors Seminar I U 1**

Discussion of topics relevant to academic, professional, and personal development in nursing. First in a series of three sophomore Honors Seminars.

Au Qtr. 5 2-hr cl/qtr. Prereq: Soph standing in nursing, enrolled in Honors Program.

**H320.02 Honors Seminar II U 1**

Discussion of topics relevant to academic, professional and personal development in nursing. Second in a series of three sophomore honors seminars.

Wi Qtr. 5 2-hr cl/qtr. Prereq: Soph standing in nursing, enrolled in Honors Program and H320.01.

**H320.03 Honors Seminar III U 1**

Discussion of topics relevant to academic, professional and personal development in nursing. Third in a series of three sophomore honors seminars.

Sp Qtr. 4 2.5-hr seminars/qtr. Prereq: H320.02.

**337 A Nursing Perspective: Life Span Development of Individuals within a Family Context U 5**

Growth and development of individuals within the context of family from the beginning to death with an emphasis on assessment and interventions used by nurses.

Wi Qtr. 5 cl. Prereq: Soph standing in the College of Nursing or permission of instructor.

**385 Integrated Sciences for Nursing Practice**

A study of normal human pathophysiological processes of disease, and related pharmacological principles as a scientific foundation of nursing practice.

5 cl.

**385.01 Integrated Sciences for Nursing Practice I U 5**

Normal cellular and systemic homeostatic function and local and systemic responses to cellular structure and function.

Au Qtr. Prereq: Soph standing in the College of Nursing or permission of instructor.

**385.02 Integrated Sciences for Nursing Practice II U 5**

Normal and abnormal renal, musculoskeletal, cardiac and respiratory physiology and principles related to pharmacological management of major diseases of each of these body systems.

Wi Qtr. Prereq: 385.01 or permission of instructor.

**385.03 Integrated Sciences for Nursing Practice III U 5**

Normal and abnormal neurological, endocrine, gastrointestinal, hepatic, and reproductive physiology and principles related to pharmacological management of major diseases of each of these body systems.

Sp Qtr. Prereq: 385.02 or permission of instructor.

**390 Introduction to Research for Evidence-Based Practice U 3**

An introduction to the research process and evidence-based practice.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 301.03, 337, 385.03 and an approved data analysis course.

**401 Nursing Care of Childbearing and Childrearing Families U 8**

Nursing knowledge essential to caring for childbearing and childrearing families; emphasis on health promotion, risk assessment, disease prevention and management of common acute and chronic health problems.

Su, Au, Wi, Sp Qtrs. 4 cl, 16 hrs clinical. Prereq: Jr standing in nursing, 385.03 and 301.03 or permission of instructor.

**402 Nursing Care of Adults U 8**

Nursing knowledge essential to caring for adults; emphasis on health promotion, risk assessment, disease prevention and management of common acute and chronic health problems.

Au, Wi, Sp Qtrs. 4 cl, 16 hrs clinical. Prereq: Jr standing in nursing, 385.03 and 301.03 or permission of instructor.

**403 Nursing Care of Older Adults U 8**

Nursing knowledge essential to caring for older adults; emphasis on health promotion, risk assessment, disease prevention and common acute and chronic health problems.

Au, Wi, Sp Qtrs. 4 cl, 16 hrs clinical. Prereq: Jr standing in nursing, 385.03 and 301.03 or permission of instructor.

**H420 Honors Seminar**

Discussion of topics relevant to the senior thesis proposal.

**H420.01 Honors Seminar IV U 1**

Discussion of topics relevant to the senior thesis proposal. First in a series of three junior level Honors Seminars.

Au Qtr. 4 2.5-hr cl/qtr. Prereq: Jr. standing in nursing, enrolled in Honors Program, H320.03

**H420.02 Honors Seminar V U 1**

Discussion of topics relevant to the senior thesis proposal development. Second in a series of three junior level Honors Seminars.

Wi Qtr. 4 2.5-hr cl/qtr. Prereq: H420.01.

**H420.03 Honors Seminar VI U 1**

Discussion of topics relevant to the senior thesis proposal development. Third in a series of three junior level Honors Seminars.

Sp Qtr. 4 2.5-hr cl/qtr. Prereq: H420.02.

**430 The Childbearing Family****430.01 Nursing of the Childbearing Family U 4**

Nursing of the childbearing family with primary emphasis on the mother and neonate; consideration is given to individuals experiencing complications of childbearing and reproduction.

4 cl. Prereq: Jr standing in nursing.

**430.02 Practicum in Nursing of the Childbearing Family U 4**

Application of theoretical knowledge and the nursing process to the care of childbearing families, particularly the antepartal, intrapartal, and postpartal woman and the neonate.

12 hrs clinical. Prereq: Jr level standing in nursing. Concur: 430.01 or permission of instructor.

**432 Adults with Acute and Chronic Physical Illnesses I****432.01 Nursing of Adults with Acute and Chronic Physical Illnesses I U 4**

Nursing knowledge of health and illness care with adults who have acute and chronic physical illnesses.

4 cl. Prereq: Jr standing in nursing.

**432.02 Practicum in Nursing of Adults with Acute and Chronic Physical Illnesses I U 4**

Application of theoretical knowledge and the nursing process to the care of adults with acute or chronic physical illnesses.

12 hrs clinical. Prereq: Jr standing in nursing. Concur: 432.01 or permission of instructor.

**434 Individuals with Mental Illness****434.01 Nursing of Individuals with Mental Illness U 4**

Nursing knowledge for health promotion and restoration of individuals with mental illness.

4 cl. Prereq: Jr standing in nursing or permission of instructor.

**434.02 Practicum in Nursing of Individuals with Mental Illness U 4**

Application of nursing knowledge for health promotion and restoration of individuals with mental illness.

12 hrs clinical. Prereq: 12 hrs clinical. Prereq: Jr standing in nursing. Concur: 434.01 or permission of instructor.

**440 Cultural Competence in Health Care U 3**

Development of health care concepts and techniques used by nurses and other health care professionals in providing culturally competent care of individuals, families and communities.

Au, Wi, Sp Qtrs. 3-hr cl. Prereq: 301.01 and 385.01 or permission of instructor.

**450 Interpersonal Relationships in Professional Nursing Practice: Boundaries U 1-2**

In-depth study of interpersonal relationship boundary issues in nursing, including the interrelationship of personal relationship issues and professional relationship issues.

Wi Qtr. 2 cl. Prereq: Admission to the College of Nursing or permission of instructor. This course is graded S/U.

**501 High Acuity Nursing U 8**

Nursing knowledge essential to management of high acuity patients and their families in a variety of health care settings.

Au, Wi, Sp Qtrs. 4 cl, 16 hrs clinical. Prereq: Sr standing in nursing, 390, 401, 402, 403 and 440 or permission of instructor.

**502 Community Care of Persons with Mental Disorders and Other Vulnerable Populations U 12**

Application of behavioral health and community health theory and principles to the nursing care of vulnerable populations.

Au, Wi, Sp Qtrs. 6 cl, 4 sem/lab, 16 hrs clinical. Prereq: Sr standing in nursing, 390, 401, 402, 403 and 440 or permission of instructor.

**503 Leadership in Clinical Nursing Practice U 2,8**

Study of leadership principles and refinement of clinical expertise in a focused area of nursing practice.

Wi, Sp Qtrs. 2 cl and additional 24 hrs clinical for 8 hr offering. Prereq: 501 and 502.

**H520 Honors Seminar**

Discussion of topics relevant to the senior thesis process.

**H520.01 Honors Seminar VII U 1**

Discussion of topics relevant to the senior thesis process. First in a series of three senior level Honors Seminars.

Au Qtr. 3 3.5-hr cl. Prereq: H420.03.

**H520.02 Honors Seminar VIII U 1**

Discussion of topics relevant to the senior thesis process. Second in a series of three senior level Honors Seminars.

Wi Qtr. 3 3.5-hr cl. Prereq: H520.01.

**H520.03 Honors Seminar IX U 1**

Discussion of topics relevant to the senior thesis process. Third in a series of three senior level Honors Seminars.

Sp Qtr. 3 3.5-hr cl. Prereq: H520.02.

**522 Community Health****522.01 Community Health Nursing U 4**

Community health nursing knowledge, incorporating concepts of epidemiology, populations, levels of prevention, health promotion, and health care systems.

4 cl. Prereq: Sr standing in nursing.

**522.02 Practicum in Community Health Nursing U 4**

Nursing knowledge of community health incorporating concepts of epidemiology, populations, levels of prevention, health promotion, and health care systems.

12 hrs clinical. Prereq: Sr standing in nursing; concur 522.01 or permission of instructor.

**524 Children and Their Families****524.01 Nursing Care of Children and Their Families U 4**

Nursing knowledge of infants and children with acute and chronic illnesses and their families; consideration is given to health promotion during childhood.

4 cl. Prereq: Sr standing in nursing.

**524.02 Nursing Care of Children and Their Families U 4**

Application of nursing knowledge and nursing process to the care of children and their families; emphasis is on those with acute and chronic illnesses.

12 hrs clinical. Prereq: Sr standing in nursing. Concur: 524.01 or permission of instructor.

**526 Adults with Acute and Chronic Physical Illnesses II**

Au Qtr.

**526.01 Nursing Adults with Acute and Chronic Illnesses II U 4**

Nursing knowledge of adults with acute and chronic multiple system physical illnesses; consideration of family, social issues, environmental systems, and continuity of care.

4 cl. Prereq: Sr standing in nursing.

**526.02 Practicum in Nursing Adults with Acute and Chronic Physical Illnesses II U 6**

Application of theoretical knowledge and nursing process to the care and management of adults with multiple physical illnesses; consideration of family and health-care systems.

18 hrs clinical. H526.02 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Sr standing in nursing. Concur: 526.01 or permission of instructor. H526.02 is an offering required for students in the College of Nursing honors program.

**530 Contemporary Nursing Practice Issues P 3**

Study of the nurse's role in health care delivery systems and the analysis of contemporary issues affecting the professional nurse and nursing practice.

3 cl. Prereq: Sr standing in Nursing.

**H541 Introduction to Nursing Research U 5**

An introductory course in nursing research methods; alternate research designs and data analysis techniques for interested and capable students.

Wi Qtr. Prereq: Stat 135, 145 or Psych 220 or Sociol 549, jr or sr standing, 3.50 cum pt-hr ratio or above and permission of instructor. Not open to students with credit for 540.

**H580 Ethical Conflicts in Health Care Research, Policy, and Practice U 5**

An interdisciplinary approach to an analysis of central moral dilemmas in health care research, policy, and practice.

2 2-hr cl. Prereq: Jr or sr in college of nursing, Philos 130, or permission of instructor. Not open to students with credit for Philos H580. Cross-listed in Philosophy.

**593 Individual Studies U 1-8**

Study of selected problems in nursing.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

**595 Leadership in Nursing for Students in the Reserve Officer's Training Corps (ROTC) U 4**

Application of knowledge gained from previous nursing courses to the role of an Army Nurse Corps officer.

Prereq: Must have completed the junior level of the nursing curriculum and be a cadet in the Reserve Officer's Training Corps. Independent study. This course is graded S/U.

**601 Scientific Thought in Nursing U G 3**

Study of the nature of scientific thought, critical thinking and moral reasoning in the discipline of nursing.

Au, Sp Qtrs. 1 3-hr cl. Prereq: Admission to master's program in nursing or permission of instructor.

**602 Theoretical Foundations for Advanced Practice Roles in Nursing U G 3**

The study of theoretical foundations for advanced nursing practice.

Su, Wi Qtrs. 3 cl. Prereq: Admission to master's program in nursing or permission of instructor.

**603 Nursing within the American Health Care System U G 3**

Analysis of American health care delivery system and policy making process with an emphasis on social, political, and economic factors affecting delivery of nursing services.

Su, Au Qtrs. 1 3-hr cl. Prereq: Admission to master's program in nursing or permission of instructor.

**605 Human Health Assessment U 3**

Development of basic human health assessment skills with emphasis on health history taking, physical examination techniques, and recording concise summaries.

2-hr cl, 3-hr lab. Prereq: Upper division health professions student, graduate health professional student or permission of instructor.

**611 Professional Nursing Practice G 8**

Introduction to professional nursing practice; emphasis on knowledge and skills required for disease prevention, health promotion and restoration across the life span.

Au Qtr. 5 cl, 12 hrs lab and clinical. Prereq: Admission to the Graduate Entry Program in Nursing.

**621 Maternal-Child Health Nursing G 9**

Theory and clinical practice essential to nursing care of childrearing and childrearing families; emphasis on health promotion, risk assessment, disease prevention and common acute/chronic health problems.

Wi Qtr. 2 2-hr cl, 16 hrs clinical, 4 hr lab. Prereq: 703 and 611 or permission of instructor.

**622 Nursing Care of Adults and Older Adults G 12**

Nursing knowledge essential to caring for adults and older adults; emphasis on health promotion, risk assessment, disease prevention and management of common acute and chronic health problems.

Sp Qtr. 8 cl and 16 hrs clinical. Prereq: 704, 621, and 637 (or equiv course) or permission of instructor.

**637 A Nursing Perspective: Growth and Development Through the Life Span G 5**

Growth and development of individuals within the context of the family from the beginning to death with an emphasis on assessment and interventions used by nurses.

Wi Qtr. 5 cl. Prereq: Admission to the Graduate Entry Program in Nursing or permission of instructor.

**640 Issues of Culture and Diversity in Health Care G 3**

Concepts and techniques used by nurses in cultural assessment of individuals, families and communities.

Sp Qtr. 3 cl. Prereq: Admission to the Graduate Entry Program in Nursing or permission of instructor.

**652 Nursing Process in the Operating Room U 3**

Study of nursing process with clients in the pre-operative, intra-operative, and post-operative phase; emphasis on scrub nurse and circulating nurse roles.

Su, Au, Wi, Sp Qtrs. 1 cl, 4-hrs clinical. Prereq: Sr standing in nursing and permission of instructor. This course is graded S/U.

**653 Nursing Assessment of Early Parent-Child Interaction: Theory and Measurement U G 3**

Examination of theory and research relevant to nursing assessment of early parent-child interaction and its application to nursing interventions to improve child health outcomes.

Su Qtr. 2 cl, 2 hrs lab. Prereq: Sr or grad standing in nursing or permission of instructor.

**654 Human Sexuality and Nursing Practice U G 3**

Use of nursing theory and nursing process to study sexual health and aberrations in sexual health across the life span.

3 cl. Prereq: Sr or grad student in Nurs, RN, or permission of instructor.

**655 Introduction to Critical Care Nursing U 2-5**

Clinical concentration in critical care nursing including: pathophysiology, pharmacology, advanced nursing skills and treatment modalities in selected critical care clinical situations.

2 cl, 9 hrs clinical. Prereq or concur: 526.01 and 526.02 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Elective course offering in nursing. This course is graded S/U.

**656 Oncology Nursing U 2**

Basic and intermediate level information for nursing care of people with cancer including prevention, detection, and treatment in acute, ambulatory or home care settings.

Au, Wi, Sp Qtrs. 2 cl. Prereq: Sr undergrad student in the College of Nursing or RN student or permission of instructor.

**694 Group Studies in Nursing U G 1-6**

Group studies of special problems in nursing; topics vary for quarters.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr nursing or grad student. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su Qtr. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

3 cl. Limited to students in allied medical professions, education, law, nursing, medicine, social work, and theology (Columbus seminaries).

**700.01 Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.

Wi Qtr. Repeatable to a maximum of 9 cr hrs.

**700.02 Changing Societal Values U G 3**

Identification and clarification of value considerations as they relate to professional problems in dealing with consumers/clients/patients.

Repeatable to a maximum of 9 cr hrs.

**700.03 Ethical Issues U G 3**

Ethical issues of concern to the professions and arising out of the advanced technology: euthanasia, mind control, malpractice, and social responsibility of the profession.

Au Qtr. Repeatable to a maximum of 9 cr hrs.

**700.04 Interprofessional Practicum in Clinical Settings U G 3,5**

Interprofessional teamwork in clinical settings.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**700.05\* Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**700.07 Interprofessional Approaches to Child Abuse and Neglect U G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

1 2.5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**702 Research for Evidence Based Clinical Practice G 4**

Prepares students to use extant research and existing data bases to provide quality care, initiate change, and plan and evaluate programs of care.

Wi, Sp Qtrs. 3 cl, 2 lab. Prereq: Undergrad research course and intermediate statistics course, or permission of instructor.

**703 Pathophysiology of Altered Health States I G 4,5**

Analysis of theories and research regarding alterations of health states across the life span, with an emphasis on pathophysiological processes.

Au Qtr. 4 cl all students; 1 additional hr seminar with 5 credit hour offering. Prereq: Admission to master's program in nursing or permission of instructor.

**704 Pathophysiology of Altered Health States II G 4,5**

Analysis of theories and research regarding alterations of health states across the life span, with an emphasis on pathophysiological processes.

Wi Qtr. 4 cl all students; 1 additional hr seminar with 5 credit hour offering. Prereq: 703 or permission of instructor.

**705 Advanced Health Assessment G 5**

Development of advanced health assessment skills. Emphasis on the acquisition of normal and abnormal assessment data relevant to clinical reasoning in advanced nursing practice.

Su, Sp Qtrs. 1 3-hr cl; 4-hr clinical lab. Prereq: Knowledge of basic physical assessment and 703 or permission of instructor.

**706 Pharmacology in Advanced Nursing Practice G 4**

Pharmacologic management for the advanced practice nurse of well persons and patients through the life span with selected chronic diseases and acute short-term illnesses.

Su, Wi Qtrs. 2 2-hr cl. Prereq: Enrollment in nursing graduate program or permission of instructor.

**707 Reimbursement and Cost Methods for Advanced Practice Nurses G 3**

Examination of reimbursement methods for health care services and the concepts of cost analysis necessary for program development/monitoring and management of an independent nursing practice.

Au, Sp Qtrs. 3 cl. Prereq: Admission to the master's program in nursing or permission of the instructor; basic skill in spreadsheet development and editing.

**710 Promotion of Health in Adults G 3**

Theoretical perspectives, research, and systematic analysis of interventions to promote health in well and ill persons throughout the adult years.

1 3-hr cl. Prereq or concur: 701.

**711 Theoretical Foundations of Clinical Decision-Making G 4**

Advanced assessment, using a systematic process of diagnostic thinking and clinical reasoning within a research utilization framework via symptom exemplars from nursing practice.

Sp Qtr. 4 cl. Prereq: 704; or concur: 705.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition and Food Management, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children U G 3**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.

1 3-hr cl. Not open to students with credit in 717.01 in any of the cross-listed areas. Limit of 20 students.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues U G 3**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

1 2-hr cl. Not open to student with credit in 717.02 in any of the cross-listed areas. Limit of 20 students.

**717.03 Developmental Disabilities U G 3**

Focus on the most pertinent scientific and societal issues of developmental disabilities.

Au Qtr. 1 3-hr cl. Not open to students with credit for 717.03 in any of the cross-listed areas.

**719 Early Intervention Interdisciplinary Team Dynamics G 3**

Interdisciplinary team-taught course with a focus on early intervention/early childhood education services for children birth to three and their families.

Au Qtr. 2.5-hr cl. Prereq: Permission of instructor. Not open to students with credit for Alli Med 719, Edu PAES 719, HDFS 719, or Sp/Hmg 719. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, and Speech and Hearing Science.

**721 Theories, Concepts and Issues in Advanced Family Nursing G 3**

Theories, concepts, and issues from nursing and related sciences relevant to the development and care of women, children and families in various states of health and illness.

Wi Qtr. 1 3-hr cl. Prereq: Grad student in nursing or permission of instructor.

**722 Advanced Reproductive Dynamics G 4**

Analysis and synthesis of principles of reproductive physiology, genetics and fetal development, menarche, pregnancy, parturition, puerperium and menopause related to advanced nursing practice in women's health care.

Wi Qtr. 4 cl/seminar. Prereq: 703.

**723 Advanced Pediatric Assessment G 3**

Application of principles from growth and development, anatomy, physiology, pathophysiology, pharmacology, clinical decision-making and relevant health assessment data to advanced nursing practice in the care of infants and children.

Su Qtr. 2 cl, 3-hr lab. Prereq: 703 and 704 or equiv or permission of instructor.

**724 Conceptual Framework for Nurse-Midwifery Practice G 3**

Introduction to program and theoretical foundations of nurse-midwifery: Health, wellness, health behavior, health promotion, communication. Perinatal epidemiology and nurse-midwifery management process are introduced.

Au Qtr. Seminar and independent learning. Prereq: Admission to the master's program in nursing and the nurse-midwifery area of study, or permission of instructor.

**725 Primary Care of Women G 3**

Screening, diagnosis, clinical decision-making, treatment and referral are emphasized in the context of common health problems of women across the lifespan.

Seminar and independent study. Prereq: 724 or permission of instructor.

**726 Pharmacology in Nurse-Midwifery Practice G 3**

Knowledge necessary for the pharmacological management by nurse-midwives of: well-women with contraceptive needs and common health problems; pregnant and childbearing women; and the neonate.

Seminar and independent study. Prereq: Admission to the master's program in nursing and nurse-midwifery area of study or permission of instructor.

**730 Health and Functioning of Older Adults: A Nursing Perspective G 3**

Health-promoting nursing interventions with older adults to reduce adverse risks and improve functioning.

2-hr cl, 1-hr seminar, 3-hrs field work. Prereq: 701.

**740 Neuroscience Principles and Concepts Relevant to Psychiatric/Mental Health Nursing G 3**

Neurobiological bases of brain-mind-behavior relationships in mental health and illness, including chemical dependence. Emphasis on promotion, maintenance and restoration of central nervous system homeostasis.

3 hrs lecture/discussion. Prereq: Admission to master's program in nursing or permission of instructor.

**745 Advanced Psychiatric/Mental Health Nursing: Individuals and Families G 3**

Advanced clinical therapeutic nursing interventions with persons who have severe and persistent mental illness, and/or chemical dependence, and their families.

4-hr seminar/discussion. Prereq or concur: 702 or permission of instructor.

**746 Advanced Psychiatric/Mental Health Nursing: Impact of Policy on Behavioral Health Care Systems G 3**

Study of political, economic and social forces impacting the public mental health system and delivery of advanced practice nursing services in behavioral health care systems.

3-hr seminar. Prereq or concur: 603; or permission of instructor.

**752 Community Health Nursing: Society as Client G 3**

Overview of contemporary community health nursing theory, research, and practice skills necessary to provide nursing care to selected groups or aggregates within a community setting.

Au, Wi Qtrs. 3 cl. Prereq: Admission to master's program in nursing or permission of instructor.

**777 Group Process for the Health Professional G 3**

Theoretical approaches to group work in the health professions. Focus on group process, approaches to group therapy and approaches to groups in health care treatment.

Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor.

**778 Chemical Dependence Treatment G 3**

Study of chemical dependence as it affects the individual and family. Theoretical concepts and research findings supporting assessment and treatment of chemical abuse and dependence.

3 cl. Prereq: Grad standing or permission of instructor.

**H783 Honors Research U 1-5**

A project or research study conducted by each honors student with the guidance of a faculty mentor. Student project or thesis presentations are included.

Au, Wi, Sp Qtrs. Arr. Prereq: H420.03. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

**793 Individual Studies in Nursing U G 1-5**

Reading, conferences, and minor investigation by an individual student who wishes to study a particular nursing problem intensively.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

**797 Interdepartmental Seminars U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Repeatable. Permission of college secretary needed to repeat.

**810 Advanced Nursing of Adults with Pulmonary Disease G 6**

Examination of biopsychosocial concepts, human responses, advanced nursing assessments, and interventions related to actual and potential health problems in adults experiencing pulmonary illnesses.

2 2-hr cl, 9 hrs clinical. Prereq: 711.

**811 Advanced Nursing of Adults with Cardiovascular Illness G 6**

Examination of biopsychosocial concepts, human responses, advanced nursing assessments, and interventions related to actual and potential health problems in adults with cardiovascular alterations.

2 2-hr cl, 9 hrs clinical. Prereq: 711.

**812 Advanced Nursing of Adults with Acute and Chronic Illnesses G 6**

Examination of biopsychosocial concepts, human responses, nursing assessments, and interventions related to actual and potential health problems in adults experiencing acute and chronic illnesses.

2 2-hr cl, 9 hrs clinical. Prereq: 711.

**813 Advanced Nursing of Adults with Cancer G 6**

Examination of biopsychosocial concepts, human responses, nursing assessments, and interventions related to prevention, diagnosis, and care of adults experiencing cancer.

2 2-hr cl, 9 hrs clinical. Prereq: 711.

**819 Advanced Adult Health & Illness Nursing Practicum G 6**

Role immersion in the advanced practice of adult health and illness nursing.

1 2-hr cl, 15 hrs clinical. Prereq: 810 and 811, or 812 and 813.

**829 Advanced Parent-Child Nursing Practicum G 6**

Synthesis of knowledge for application to advanced practice to selected populations using theoretical knowledge, management, teaching, and standards of care.

2 cl, 19-hrs clinical. Prereq: 820.02, 821.02, or 822.02.

**830 Principles of Gerontological Nursing G 5**

Study of aging process and factors that influence health, functional capacity, and nursing care of older adults in the community and in acute and long-term settings.

2-hr cl, 1-hr seminar, 6-hrs field work. Prereq: 702, 704, or permission of instructor.

**850 Community Health Nursing: Assessment G 2-5**

Study and application of methods used in assessing the health of small groups, aggregates, and communities.

2-hr lecture/discussion for all students; 12 hrs field work for students enrolled for 5 or hrs. Prereq: 801, 802, 702, 752, and Prev Med 711.

**851 Community Health Nursing: Intervention G 2,5**

Study and application of methods used in providing nursing interventions to small groups, aggregates, and communities.

2-hr lecture/discussion for all students; 12 hrs field work for students enrolled for 5 or hrs. Prereq: 850 and 860.

**852 Community Health Nursing: Evaluation G 2,5**

Study of strategies and evaluation techniques used by community health agencies/advocates.

2-hr lecture/discussion for all students; 12 hrs field work for students enrolled for 5 or hrs. Prereq: 851.

**859 Advanced Practice Nursing G 2-10**

Application of theories, research findings, skills and interventions for advanced practice nursing in primary, acute and chronic care.

Su, Au, Wi, Sp Qtrs. 4-hr seminar; clinical. Prereq: All specialty care courses or permission of instructor. Repeatable.

**862 Practicum in Nursing**

Supervised experiences which permit in-depth study of the roles and relationships in administration, practice, or teaching of nursing.

Prereq: Permission of instructor.

**862.01 Administration G 2-10**

Study of administrative position with opportunity to test theoretical knowledge in a health care system.

2 hr sem; field work.

**862.03 Nurse Practitioner Practicum G 2-10**

A preceptor-guided, in-depth study of the role and relationships of the nurse practitioner.

4-hr cl (for 2 cr hrs) plus 24 hrs clinical (for an additional 8 cr hrs). Prereq: 819 or 839 or permission of instructor. Repeatable to a maximum of 25 cr hrs.

**862.05 Teaching in Nursing G 3-8**

Theories and concepts from Nursing and Education are applied and used in selected Nursing Education experiences.

3 sem; field work. Clinical sites arranged with faculty.

**871 Primary Prevention and Health Issues Related to Chemical Use, Misuse and Dependency in Children and Adolescents G 3**

Biopsychosocial effects of alcohol and other drugs on the physical, intellectual and emotional lives of users and significant others. Primary prevention approaches for children and adolescents addressed.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Grad standing or permission of instructor. This course is graded S/U.

**872 Intervention Assistance Team: A Strategy for Working with At-Risk Youth in Schools G 3**

Responses to a wide range of student/family needs including: adequate services, appropriate non-discriminatory placement, crisis resolution, effective discipline practices and safe and drug-free schools programs.

Su, Au, Sp Qtrs. 3 cl. Prereq: Grad standing or permission of instructor. This course is graded S/U.

**880 Seminar G 2-5**

Discussion of issues, trends, and problems in nursing; topics to be announced.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs.

**893 Individual Studies G 1-5**

Advanced individual studies in selected areas not otherwise offered in nursing.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in graduate program or permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**894 Group Studies in Nursing G 2-5**

Reading and group conferences for graduate students who desire to study a particular trend in nursing or nursing education.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 5 cr hrs.

**900 Pro Seminar in Nursing G 1**

Examination of current health care problems, national research priorities, issues within nursing science, career patterns of women and doctorally prepared nurses.

Au, Wi, Sp Qtrs. 2 cl. Prereq: PhD student in nursing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**901 Theoretical Foundations of Nursing Science G 5**

Study of the major philosophies of nursing from a historical perspective and analysis of methods for theory development in nursing science.

Au Qtr. 5 cl. Prereq: PhD student in nursing, or permission of instructor; prereq or concur: 900.

**902 Quantitative and Qualitative Analysis in Nursing Science**

Study of quantitative and qualitative methodologies used in developing and conducting holistic health research at the individual, family, and community levels of analysis.

**902.01 Qualitative Methods in Nursing Science G 5**

Study of qualitative methods used in conducting nursing research; laboratory experience will include field work; data management and analysis.

3 cl, 4-hrs lab. Prereq: 901 or permission of instructor.

**902.02 Quantitative Methods in Nursing Science G 5**

Study of biobehavioral quantitative methods and measurement strategies used in conducting nursing research; laboratory experiences will include instrument testing, data management, and analysis.

Au Qtr. 3 cl, 4 hrs lab. Prereq: 901, 15 cr hrs of res and stat or permission of instructor.

**902.03 Research Program Development in Nursing G 3**

Study of theoretical, methodological, and analytical approaches building and testing in nursing science, grantsmanship process, and career development of a nurse scientist.

Wi Qtr. 2 cl, 3-hr lab. Prereq: 902.01, 902.02 or permission of instructor.

**903 Theory Synthesis I G 3**

In-depth analysis of health theories from nursing, biological, and behavioral sciences; emphasis on theories derived from a nursing perspective.

Wi Qtr. 3 cl. Prereq: 901 or permission of instructor.

**905 Studies in Nursing Science at the Individual System Level**

Advanced studies in nursing theory and nursing research about individuals in nursing science.

Prereq: 900 and enrollment in PhD program or permission of instructor.

**905.01 Study in Nursing Science at the Individual System Level G 3**

Study of nursing theory about the individual from a holistic health perspective and development of nursing theory about the individual.

**906 Studies in Nursing Science at the Family System Level**

Advanced studies in family nursing theory and family nursing research in nursing science.

Prereq: 900 and enrollment in PhD program or permission of instructor.



**906.01 Studies in Nursing Science at the Family System Level G 3**

Study of family nursing theory from a holistic health perspective and methods for theory construction about the family system in nursing science.

**907 Studies in Nursing Science at the Community System Level**

Advanced studies in community nursing research in nursing science.

Prereq: 900, enrollment in PhD program or permission of instructor.

**907.01 Studies in Nursing Science at the Community System Level G 3**

Study of community nursing theory from a holistic perspective and methods for theory construction about the community system in nursing science.

3 cl.

**999 Research in Nursing G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Occupational Therapy

School of Allied Medical Professions  
406 Atwell Hall, 1583 Perry Street, 292-5824

**435 The Analysis of Human Motion Relative to Occupational Therapy Practice U 4**

A study of nerve-muscle-bone structures as these relate to observing, counting, and measuring overt bodily movement.

Au Qtr. 3 1-hr cl, 1 2-hr lab. Enrollment in Occupational Therapy Division.

**450 Practice of Occupational Therapy in Health Care Settings U 5**

The development of observation and clinical communication skills, and the analysis of the health care team in health care settings.

Wi, Sp Qtrs. 2 1-hr cl, 6 clin hrs. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**451 Directed Practicums**

Systematic observation, assessment and written analysis of patient data for treatment plans for individuals with emotional and physical problems.

Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**451.01 Mental Health U 4**

Su, Au, Wi, Sp Qtrs. 1 cl, 6 clin hrs.

**451.02 Physical Function U 4**

Su, Au, Wi, Sp Qtrs. 1 cl, 6 clin hrs.

**451.03 Specialty U 1-4**

Su, Au, Wi, Sp Qtrs. Arr.

**451.04 Public Schools U 2**

Wi, Sp Qtrs. 1 cl, 4 clin hrs.

**452 Interpersonal Dynamics and Task Oriented Groups in Occupational Therapy U 3**

Identification, examination, and demonstration of factors that facilitate or hinder small primary group functioning in occupational therapy.

Au Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: Enrollment in Occupational Therapy Division.

**522 Studies in Psychopathology U 3**

A description of selected psychopathic disorders, diagnoses of behavior, psychiatric treatment procedures and their implications for the practice of occupational therapy.

Sp Qtr. 1 1-hr, 1 2-hr cl. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**540 Alternative Theoretical Constructs of Occupational Therapy Practice and Professional Issues U 5**

Examination of the history, organization, and issues of the profession; examination of alternative theoretical constructs that characterize occupational therapy practice.

Wi, Sp Qtrs. 2 2.5-hr cl. Prereq: Enrollment in Occupational Therapy Division.

**545 Activity Analysis and Media U 2**

Activity analysis in relationship to self-care, work, and play.

Wi Qtr. 2 2-hr labs. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**546 Applied Media: Dysfunction, Equipment, and Graded Activity U 2**

Grading activity and adapting selected activities that have an impact on performance in patients with selected dysfunctions.

Au Qtr. 2 2-hr labs. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**560 Neurodevelopmental Constructs in the Practice of Occupational Therapy U 3**

An examination of the neurodevelopmental constructs and their application to the practice of occupational therapy.

Au Qtr. 2 1.5-hr cl. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**595 Seminar U 1-3**

Conferences, group discussions, and presentations of selected topics.

Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**623 Sensorimotor Conditions in Occupational Therapy U 3**

An overview of sensorimotor conditions seen in occupational therapy. Onset, disease progression, and occupational therapy assessment and intervention are addressed.

Au Qtr. 2 1.5-hr cl. Prereq: Enrollment in Occupational Therapy Division. Required for occupational therapy majors.

**651 Development of Occupational Behavior Throughout the Life Span U G 5**

Exploration of interactions between personal characteristics, roles, activities and environment in the development of occupational behavior throughout the life span.

Wi Qtr. Prereq: Enrollment in Occupational Therapy Division. Required for all occupational therapy majors.

**652 Neuroscience: Fundamentals for Occupational Therapists U G 5**

Establish a thorough understanding of the fundamentals of neuroscience to enable students to interpret, evaluate and treat clients in an occupational therapy setting.

Wi Qtr. 2 2-hr cl, 1 1-hr cl. Prereq: Enrollment in Occupational Therapy Division. Required for occupational therapy majors. Prereq to Occ Ther 661, 662, 663.

**661 Occupational Therapy in Mental Health U 5**

The competing theoretical constructs and related intervention techniques for the practice of occupational therapy in the treatment of patients with chronic emotional problems.

Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**662 Application of the Neurodevelopmental Constructs U G 5**

Analysis of case studies for deviations that require application of neurodevelopmental assessment techniques to develop treatment plans.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**663 Physical Dysfunction and the Practice of Occupational Therapy U 5**

The application of assessment techniques to patients with selected physical dysfunction problems for the development of treatment plans.

Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**664 Advanced Therapeutic Intervention**

Principles and methods of evaluation, treatment, and prevention for advanced clinical students.

Au, Wi, Sp Qtrs. 2 cl hr, 1 2-hr lab. Prereq: 560, 661, 662, 663 or equiv with written permission of instructor.

**664.01 Psycho-Social Intervention U 3****664.03 Rehabilitation Techniques U 3****667 Occupational Therapy with Young Children U G 3**

Overview of pediatric occupational therapy; emphasis on neurophysiological and developmental approaches with young children with developmental disabilities; includes assessment and intervention strategies and family issues.

Sp Qtr. 2 1.5-hr cl. Prereq: 560 and 662; sr standing in occ ther.

**670 Introduction to Alternative Research Methodologies Used in Occupational Therapy Practice U 3**

Historical, theoretical, and descriptive research methodologies applied to the practice of occupational therapy.

Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**675 Developing Plans for Initiating Occupational Therapy Services U 3**

Developing and evaluating plans for introducing occupational therapy practice in selected clinical facilities requiring specialized services.

Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

**685 Field Work in Occupational Therapy**

A practical experience in application of the principles and functions of occupational therapy in selected hospitals, health care facilities, and community agencies.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Cumulative pt-hr ratio of 2.25 in all professional courses and permission of division director. Completion of all courses required for graduation.

**685.01 Mental Health U 6**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**685.02 Physical Function U 6**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**685.03 Specialty Area U 2,4,6**

1, 2 or 3 months, arr with instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**693 Individual Studies U 1-5**

Individual reading or research projects by special agreement between instructor and student.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Supervised group studies of special topics pertinent to the practice of occupational therapy.

Su, Au, Wi, Sp Qtrs. Open only to students enrolled in Occupational Therapy Division. Repeatable to a maximum of 15 cr hrs.

**701 Occupational Therapy in Early Intervention G 3**

Research/theoretical basis of occupational therapy in early intervention; principles and strategies for working with families; therapy approaches with young children; models of service delivery.

Au Qtr. 1 3-hr cl. Prereq: Permission of the instructor.

**702 Theoretical Approaches in Occupational Therapy with Children G 3**

Neurophysiological and sensory integration approaches used in occupational therapy with young children in a variety of settings.

Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**703 Occupational Therapy in the Schools G 3**

An overview of occupational therapy best practice in the public schools. Students gain understanding of educational regulations, service delivery models, educational research and trends.

Au Qtr. 3 hrs lecture. Prereq: AMP grad standing or permission of instructor.

**793 Individual Studies G 1-5**

Guided study with occupational therapy readings, research, and/or experiences selected by the individual and approved by faculty.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**795 Seminar G 1-3**

Analysis and group discussion of selected topics.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**889 Advanced Clinical Practicum in Occupational Therapy**

Advanced clinical experience in occupational therapy.

Su, Au, Wi, Sp Qtrs. 1-hr cl and clinic hrs arr. Prereq: Permission of instructor and enrollment in AMP grad program.

**889.01 Pediatric Area of Specialization G 2-4**

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**796 Interdisciplinary Seminar in Advanced Biochemistry G 1**

Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 21 cr hrs.

796A— This alphabetical subdivision is graded S/U.

**999 Research in Biochemistry**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. This course will not serve as a replacement for the 999 course offering within a faculty's academic department.

**999.01 Research in Biochemistry G 1-18**

Repeatable. This course is graded S/U.

## Ophthalmology

5024-B University Hospitals Clinic, 456 West 10th Avenue, 293-8159

The faculty of the Department of Ophthalmology is responsible for the instruction in the pathophysiology of the eye and its adnexa as part of the Med II of the medical curriculum. This instruction is offered under the course designation Med Coll 663. The Department also offers clinical instruction in ophthalmology during Med III and Med IV of the Medical Program designated Med Coll 664. This instruction is offered as a clinical elective period of one month. Research electives are available at any time in the curriculum of medical education.

**999 Research in Ophthalmology G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Optometry

A 400 Starling-Loving, 338 West 10th Avenue, 292-2647

**401 Survey of Optometry P 1**

Development of optometry and optometric education; scope of optometric services; sources of vision information; kinds of current vision research.

Au Qtr. 1 cl. Prereq: Optometry 1st yr standing.

**402 Rights and Responsibilities of Optometrists P 2**

Evaluation of the role following factors on the provision of vision and eye care to the public: professionalism and ethics, professional development, community health factors, and interpersonal skills.

Sp Qtr. 2 cl. Prereq: Enrolled in the College of Optometry.

**431 Ophthalmic Optics I P 5**

Ophthalmic optics of single-vision and multifocal spectacle lenses; measurement and inspection of spectacle lenses; manufacturing processes.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 2nd yr standing.

**432 Ophthalmic Optics II P 5**

Ophthalmic lens design; minimizing lens aberrations; theory and practice in fitting and adjusting spectacles.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 431.

**433 Ophthalmic Optics III P 4**

The optics of corneal and scleral contact lenses; laboratory exercises in inspecting, measuring, edging, surfacing, and modifying contact lenses.

Su, Au Qtrs. 3 cl, 1 2-hr lab. Prereq: 432.

**441 Practical Optometry I P 4**

Theory and techniques of keratometry, skiametry, objective and subjective tests of refraction, accommodation, and functions of the extra-ocular muscles.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Enrollment in the College of Optometry.

**442 Practical Optometry II P 4**

Correlation and analysis of data; systematic determination of the etiology of anomalies and sources of visual discomfort and inefficiency; diagnosing and prescribing.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 441.

**443 Practical Optometry III P 4**

Ophthalmoscopy and examination of the external parts and the media of the eye; case histories; techniques of investigating special types of anomalies; diagnosing; prescribing.

Sp Qtr. 3 cl, 1-3 hr lab. Prereq: 442 and 711.

**640 Clinical Practice in Optometry I P 1**

Consideration of selected problems and conditions encountered in the delivery of patient care.

Su Qtr. 1 cl. Prereq: 443.

**641 Clinical Practice in Optometry II P 1**

Continuation of 640.

Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: 640.

## Ohio State Biochemistry Program

85 Botany and Zoology Building, 1735 Neil Avenue, 292-1463

**790 Colloquium-Advanced Biochemistry Topics G 1**

Seminars presented by Ohio State faculty and by faculty and professionals from outside the University.

Au, Wi, Sp Qtrs. 1 cl. Open only to students in the Ohio State biochemistry program. Repeatable to a maximum of 21 cr hrs. This course is graded S/U.

**793 Individual Studies G 1-5**

A qualified graduate student may conduct a minor laboratory research investigation in biochemistry under the direction of program faculty members.

Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Admission to the OSBP. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**794 Group Studies G 1-5**

Designed for students to investigate advanced selected topics in biochemistry.

Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Admission to the OSBP. Repeatable to a maximum of 10 cr hrs.

**642 Clinical Practice in Optometry III P 1**

Continuation of 641.

Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: 641.

**643 Clinical Practice in Optometry IV P 1**

Continuation of 642.

Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: 642.

**645 Intermediate Special Clinical Practice P 1-6**

Clinical experience in specialized phases of optometric practice.

Su, Au, Wi, Sp Qtrs. 3-18 clinic hrs.

**645.01 Intermediate General Practice P 1-6**

Clinical practice in examining the visual system and carrying out corrective procedures.

Prereq: Optometry 3rd yr standing and 443. Repeatable to a maximum of 30 cr hrs.

**645.02 Intermediate Ophthalmic Dispensing P 1-6**

Prereq: Optometry 3rd yr standing and 443. Repeatable to a maximum of 30 cr hrs.

**645.03 Clinical Practice Management P 1-6**

Observation and participation in management procedures of a professional optometric practice.

3-9 clinic hrs. Prereq: Optometry 2nd yr standing and 442. Repeatable to a maximum of 15 cr hrs.

**653 Contact Lenses I P 5**

The uses of contact lenses; theory and methods of prescribing and fitting; specification and verification; post-fitting care; contact lens solutions.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 3rd yr standing and 443.

**654 Contact Lenses II P 4**

Theory and clinical methods involving meridional and bifocal contact lenses; fitting astigmatic corneas and aphakic eyes; haptic and keratoconic lenses; cosmetic shells and prosthetic eyes.

Wi, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: 653.

**655 Aniseikonia P 1**

Application of geometrical, physical and visual optics to issues concerning aniseikonia.

Sp Qtr. 1 cl.

**656 Low Vision P 4**

Etology; clinical methods of diagnosing and evaluating low vision; design of optical aids; environmental aids and agencies available to the visually handicapped.

Sp Qtr. 3 cl, 1 2-hr lab.

**660 Advanced Diagnosis and Management of Ocular Disease P 3**

Gross and microscopic pathology of the eye, including diseases of the conjunctiva, orbital cavity, and pertinent pathology of the central nervous system.

Au Qtr. 3 cl. Prereq: Optometry 3rd yr standing; Optometry 712 and Optometry 682.

**671 Clinical Binocular Vision I P 5**

Classification, epidemiology, phenomenology, diagnosis, and management of nonstrabismic and strabismic binocular vision disorders, accommodative anomalies, amblyopia, oculomotor deficiencies, and visual perceptual lags.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 3rd yr standing and 443.

**672 Clinical Binocular Vision II P 2**

Continuation of 671.

Sp Qtr. 1 cl, 1 2-hr lab. Prereq: 671.

**682 Clinical Ocular Pharmacology P 3**

A survey of pharmacologic principles pertaining to drugs which relate to normal and abnormal conditions of the eye, including topical and systemic agents affecting visual performance.

Su, Au Qtrs. 3 cl. Prereq: Pharmacol 681, and 3rd yr standing in Optometry. Open only to students registered in the College of Optometry.

**702 Applied Pathology of the Eye II P 4**

Motor disturbances of eyes.

Su Qtr. 3 cl, 1 2-hr lab. Prereq: 711.

**703 Applied Pathology of the Eye III P 4**

Visual fields testing and method of management of related ocular disorders.

Su Qtr. 3 cl, 1 2-hr lab. Prereq: 711.

**711 Introduction to Ocular Disease I P 4**

Introduction to abnormalities and diseases of anterior and posterior segments of the eye to provide student with the ability to identify and diagnose ocular disease.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Optometry 2nd yr standing.

**712 Introduction to Ocular Disease II P 5**

Continuation of 711.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 2nd yr standing, 711. Open to optometry and physiological optics majors.

**714 Systemic Disease for Optometry P 4**

The biological basis for understanding disease processes, the clinical characteristics of diseases, and approaches to diagnosis and treatment of diseases.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Optometry 3rd yr standing or permission of instructor.

**721 Optometric Economics and Jurisprudence P 3**

Historical background; legal status; practice building techniques; office accounting and general practice management; representative organizations in optometry; professional ethics.

Wi, Sp Qtrs. 3 cl. Prereq: 643.

**722 Civic and National Problems in Eye Care P 3**

Number, distribution, supply interrelationships, and roles of the various ophthalmic groups; prevalence of visual anomalies; governmental and public-health aspects of vision care.

Sp Qtr. 3 cl.

**741 Advanced Practical Optometry P 3**

Consideration of selected conditions encountered during the 4th year clinical assignments; their diagnosis and treatment.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Optometry 4th yr standing. Repeatable to a maximum of 6 cr hrs.

**745 Special Clinical Practice**

Clinical experience in specialized phases of optometric practice.

Su, Au, Wi, Sp Qtrs. 3-45 clinic hrs. Prereq: Optometry 4th yr standing and course indicated in selected subdivision.

**745.01 General Practice P 1-15**

Prereq: 643. Repeatable to a maximum of 45 cr hrs.

**745.02 Contact Lenses P 1-15**

Prereq: 654. Repeatable to a maximum of 45 cr hrs.

**745.03 Strabismus and Orthoptics P 1-15**

Prereq: 651. Repeatable to a maximum of 45 cr hrs.

**745.04 Ocular Pathology P 1-15**

Prereq: 703. Repeatable to a maximum of 45 cr hrs.

**745.05 Aniseikonia P 1-15**

Prereq: 652. Repeatable to a maximum of 45 cr hrs.

**745.06 Low Vision P 1-15**

Prereq: 652. Repeatable to a maximum of 45 cr hrs.

**745.07 Perceptual-Motor Problems P 1-6**

Prereq: 643. Repeatable to a maximum of 45 cr hrs.

**745.08 Ophthalmic Dispensing P 1-15**

Clinical experience in ophthalmic dispensing.

Prereq: 643. Repeatable to a maximum of 45 cr hrs.

**745.09 Geriatric Optometry P 1-15**

Specialized techniques, evaluation methods, patient instructions, and lens design appropriate to the vision problems of the older patient.

Prereq: 643. Repeatable to a maximum of 45 cr hrs.

**745.10 Pediatric Optometry P 1-15**

Specialized testing techniques and methods of evaluation appropriate to infants and children (through age 12) as well as exceptional children of any age.

Prereq: 643. Repeatable to a maximum of 45 cr hrs.

**745.11 Extern Experience P 1-15**

Prereq: 643. Repeatable to a maximum of 45 cr hrs.

**710 Topics in Optometry**

Clinical and theoretical aspects of areas of current interest in optometry.

Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in College of Optometry and permission of dean. Each subdivision repeatable to a maximum of 10 cr hrs.

**780.01 General Optometry P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.02 Contact Lenses P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.03 Strabismus P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.04 Ocular Pathology P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.05 Aniseikonia P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.06 Low Vision P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.07 Visual Development P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.08 Visual Perception P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.09 Visual Performance P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.10 Environmental Vision P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.11 Pediatric Optometry P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.12 Geriatric Optometry P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.13 Ophthalmic Optics P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.14 Special Optical Design P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.15 Optometric Instrumentation P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.16 Public Health Optometry P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.17 Ocular Pharmacology P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.18 Microbiology of the Eye P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.19 Binocular Vision P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.20 Visual Problems of Minorities P 1-5**

Repeatable to a maximum of 10 cr hrs.

**780.21 Special P 1-5**

Repeatable to a maximum of 10 cr hrs.

## Pathology

Education Office: 119 Hamilton Hall, 1645 Neil Avenue, 247-6461

**501 Principles of Hematopathology U 2**

Clinical hematology, including coagulation; urinalysis.

Au Qtr. 2 cl. Prereq: Admission to med tech or permission of instructor.

**502 Principles of Clinical Microbiology U 2**

Clinical microbiology, including mycology.

Wi Qtr. 2 cl. Prereq: Admission to med tech or permission of instructor.

**503 Principles of Immunology U 1**

Immunology.

Sp Qtr. 1 cl. Prereq: 502 and admission to med tech or permission of instructor.

**504 Principles of Clinical Chemistry U G 4**

Chemical Pathology of human tissues and body fluids; test-disease correlations.

Sp Qtr. 3-hr lecture, 1-hr recitation. Prereq: Admission to med tech or permission of instructor.

**505 Principles of Immunohematology and Transfusion Medicine U 2**

Case studies used to illustrate concepts.

Wi Qtr. 1-hr lecture, 1-hr discussion. Prereq: 503 and admission to med tech or permission of instructor. Pathological processes in immunohematology. Grad students will be expected to write a more detailed paper for the course.

**601 General Pathology G 5**

Pathophysiology and manifestations of disease.

Au Qtr. 39 hrs lecture, 10 3-hr labs. Prereq: One course in anatomy, physiol, organic chem, biochem and permission of instructor.

**640\* Fundamentals of Oncology P G 4**

Lecture/seminars covering aspects of oncology; chemical and biologic carcinogenesis, epidemiology, genetics, developmental biology, biochemistry, cell kinetics, clonality, metastases, hormonal and immunology factors, and therapy.

Wi Qtr. 4 cl. Prereq: Permission of instructor. Cross-listed in Vet Path.

**650 Pathology P G 5**

Designed to give optometry and selected graduate students an understanding of general pathology including cell injury, inflammation, infection, hemodynamic disturbances, neoplasia, basic immunopathology, and selected specific diseases; with gross and histologic demonstrations.

Sp Qtr. 5 cl. Prereq: Optometry 2nd yr standing or permission of instructor.

**655 General Pathology P 4**

General pathology, including the etiology of diseases, disturbances of nutrition, inflammation, regeneration, and organ pathology.

Wi Qtr. 4 cl, 2 3-hr lab. Prereq: Dent 2nd yr standing.

**665\* Clinical Immunopathology P G 3**

Current overview of clinical immunopathology, etiology, clinical characteristics, and lab diagnosis of immune-mediated diseases.

Wi Qtr. 3 cl. Prereq: Permission of instructor. Med Micr 701 or Microbiol 632 or equiv grad immunology course strongly recommended.

**670 Medical Cytogenetics G 3**

Overview of cytogenetics in medical diagnosis and evaluation, including laboratory techniques, nomenclature, structural and numerical chromosome abnormalities, molecular diagnostics, and clinical correlations.

Sp Qtr. 3 cl. Prereq: Course work in general genetics and molecular or cell biology, and permission of instructor.

**680 Research Design in Biomedical Sciences U G 3**

Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports.

Wi Qtr. 1 2-hr cl, 1 hr arr. Prereq: Sr standing in allied med with permission of instructor, or grad standing in allied med, pathol or related field.

**733 Human Genetics G 3**

The principles of human genetics covering mapping of disease genes, defects causing human disease, the cloning of disease genes, gene therapy and transgenes.

Sp Qtr. 3 cl and cptr time arr. Prereq: Mol Gen 500 or 501 or 606 or equiv. Not open to students with credit for M Biochem 733 or Mol Gen 733. Cross-listed in M Biochem and Mol Gen.

**792 Special Lectures in Pathology**

Lectures in special fields of pathology; one decimal subdivision will be offered each quarter.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Grad standing or enrollment in MD program or undergrad with permission of instructor.

**792.01 Blood and Bone Marrow U P G 3**

Pathology of the blood and bone marrow with emphasis on the laboratory diagnosis of anemia.

Repeatable to a maximum of 24 cr hrs.

**792.02 Lectures in Clinical Chemistry U P G 3**

The metabolic basis of disease, interpretation of laboratory data, and clinical laboratory methodology.

Repeatable to a maximum of 24 cr hrs.

**792.04 Neuropathology U P G 3**

Selected lectures on neuropathology.

Repeatable to a maximum of 24 cr hrs.

**792.05 Immunohematology U P G 3**

Transfusion related clinical and laboratory problems and procedures.

Repeatable to a maximum of 24 cr hrs.

**792.11 Automation and Instrumentation in Clinical Chemistry U P G 3**

Advanced analytical technique as applied to clinical chemical problems with discussion of the applicable area of chemical pathology.

Repeatable to a maximum of 24 cr hrs.

**792.20 Essential Readings in Immunology G 2**

Review of classical papers in immunology.

Sp Qtr. Prereq: Microbiol 701. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

**793 Individual Studies in Pathology**

1, 2, or 3 months; offered all months. (prof cr).

Prereq: Med III and IV standing, grad standing, or undergrad standing with permission of instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course must be taken.

**793.01 Pathologic Anatomy U P G 3-6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.04 Clinical Chemistry U P G 3-6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.05 Neuropathology U P G 3-6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.06 Immunohematology U P G 3-6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.07 Clinical Microbiology U P G 3-6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.08 Pediatric Pathology U P G 3-6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.09 Surgical Pathology U P G 3-6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.11 Special Topics in Pathologic Anatomy U P G 3-6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.12 Ultrastructure of Cells in Disease U P G 3-6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**793.15 Problems in Pathology and Clinical Pathology U P G 3-6,12,18**

Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**794^ Group Studies in Pathology U P G 1-3**

Group studies of selected topics in various fields of pathology.  
Prereq: Grad standing, 2nd yr med student, or undergrad with permission of instructor. Repeatable to a maximum of 12 cr hrs.

**850 Seminar in Pathology and Clinical Pathology G 1**

Discussion of pertinent literature, presentation and discussion of research work, and demonstration of fresh specimens and slides.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Grad standing in pathol. Repeatable. This course is graded S/U.

**851 Neurochemical Pathology G 1**

Lecture series on selected topics relevant to biochemical mechanisms of neurological disorders; topics change each qtr.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in pathol. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research in Pathology G 1-13**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Pediatrics

Children's Hospital, 700 Children's Drive and N-118 Doan Hall, 410 West 10th Avenue, 722-4552

**793 Individual Studies in Pediatrics**

Su, Au, Wi, Sp Qtrs. 1, 2, 3; or 4 months (prof or). Prereq: Permission of instructor.

**793.03 Infectious Diseases P G 1-5,6,12,18**

1, 2, 3, or 4 months; offered all months. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**793.06 Blood Diseases of Infants and Children P G 1-5,6**

1 month, offered all months except June. This course is graded S/U.

## Persian

203 Botany and Zoology Building, 1735 Neil Avenue, 292-9255

**101 Elementary Persian I U 5**

Introduction to Persian; development of listening, reading, speaking, and writing skills.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**102 Elementary Persian II U 5**

Further development of listening, reading, speaking, and writing skills.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**103 Intermediate Persian I U 5**

Development of listening, reading, speaking, and writing skills; reading of simplified literary texts about Persian culture.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

**104 Intermediate Persian II U 5**

Reading of Persian short stories and poems with attention to literary and cultural appreciation; development of basic language skills.

Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

**241 Persian Culture U 5**

A survey of Persian culture through the reading of Persian literature in translation, viewing of Persian films, and listening to Persian music.

Sp Qtr. 5 cl. GEC arts and hums cultures and ideas course.

**293 Individual Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Special topics to be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**370 Persian Mythology and Folklore U 5**

Mythology and folklore of Persian-speaking lands, from cosmological texts through popular theater and narrative performance to popular customs and beliefs.

Wi Qtr. 2 2-hr cl. Prereq: English 110 or 111. GEC arts and hums lit course.

**371\* Persian Literature in Translation U 5**

A study of Persian literature in translation and the history of its discourses, genres, and styles.

Wi, Sp Qtrs. 5 cl. GEC arts and hums lit course.

**401 Advanced Persian I U 5**

Extensive reading from literary texts, with practice in conversation and composition.

Wi Qtr. 5 cl. Prereq: 104 or equiv.

**402 Advanced Persian II U 5**

Advanced reading from literary texts, with further practice in conversation, composition, and translation.

Sp Qtr. 5 cl. Prereq: 401 or equiv.

**651 Persian Prose U G 5**

Selected readings reflecting the major genres of classical Persian prose, plus a modern novel.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 402 or permission of instructor.

**652 Persian Poetry U G 5**

Selected topics in Persian poetry, concentrating primarily on the medieval poetic narrative, as exemplified by epic, romance, and the mystical/didactic poem.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 402 or permission of instructor.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Special topics to be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**721 Studies in Persian Poetry U G 5**

Advanced study of specific poetic periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 10 cr hrs of Persian literature at the 600 level or equiv. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**811 Seminar in Persian Studies G 5**

Intensive investigation of a selected topic or problem in Persian literature, literary culture, philology, or linguistics.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**998 Research in Persian G 1-10**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

## Pharmacology

5072 Graves Hall, 333 West 10th Avenue, 292-8608

### 600 General Pharmacology U G 3

Introduction to the general principles of pharmacology, drug classification, and the sites and mechanisms of drug action.

Sp Qtr. Prereq: MBiochem 611, Physiol 601, or permission of instructor.

### 680 General Pharmacology for Optometrists P 3

A survey of general pharmacologic principles and actions; effects of drugs on the central-nervous system, cardiovascular system, and other systems.

Sp Qtr. 3 cl. Prereq: 1st yr standing in optometry. Open only to students registered in the College of Optometry.

### 700 Medical and Mammalian Pharmacology

General principles of pharmacology; drugs used for diagnosis, prevention, or eradication of the cause of disease, including endocrine products and chemotherapeutic agents.

Prereq: 600 or permission of instructor.

#### 700.01 Pharmacokinetics, Antimicrobial, and Autonomic Drugs P G 3-5

Au Qtr.

#### 700.02 Cardiovascular, Respiratory, and Endocrine Drugs P G 1-4

Wi Qtr.

#### 700.03 Central Nervous System and Anticancer Drugs; Toxicology and Drug Interactions P G 2-5

Sp Qtr.

### 701 Medical and Mammalian Pharmacology P G 3

Continuation of 700.

Sp Qtr. 5 cl. Prereq: 700.

### 702 Practice of Pharmacology P G 3

Performance and application of specialized pharmacological techniques and methods in evaluation of pharmacodynamic and pharmacokinetic activity of chemical substances.

Au Qtr. Prereq or concur: 701.

### 751 Professional and Ethical Issues in Biomedical Sciences G 3

A discussion course based on case scenarios dealing with ethical issues facing biomedical researchers, such as publishing practices, confidentiality, mentoring, etc.

Wi Qtr. 2 1.5-hr cl. Prereq: Currently enrolled in a graduate program in the biomedical sciences. Cross-listed in Veterinary Biosciences. This course is graded S/U.

### 793 Individual Studies in Pharmacology

Digitalis pharmacodynamics; neuropharmacology; endocrine pharmacology; cardiovascular pharmacology; autonomic pharmacology; clinical pharmacology; biochemical pharmacology; toxicology.

Su, Au, Wi, Sp Qtrs. 1, 2, 3, months; offered all months except June (prof cr). Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

### 820 Autonomic Pharmacology G 3-15

Comprehensive review of drugs that mimic or affect the actions of autonomic neurones with emphasis on biochemical and cellular analysis of autonomic drug action.

Wi Qtr. Prereq: 700 or permission of instructor.

### 821\* Cardiovascular Pharmacology G 3-15

Modern concepts of the action of drugs on the heart and circulation.

Sp Qtr. 2 cl, lab arr. Prereq: Permission of instructor.

### 824\* Psychopharmacology G 3

Psychotropic drug-induced changes in central nervous system activity in relation to the varieties of perceptual-behavioral interpretations of that activity by self-referential systems, i.e. man.

Sp Qtr. 2 cl arr. Prereq: 600, 700, or permission of instructor.

### 850 Seminar in Pharmacology G 2

Conferences on selected topics in pharmacology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 40 or hrs.

### 894 Group Studies in Pharmacology G 3-5

Designed to allow the introduction of new topics and innovative approaches to the curriculum.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

### 999 Research in Pharmacology G 1-18

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Pharmacy

217 Lloyd M. Parks Hall, 500 West 12th Avenue, 292-2266

### 200 The Rational and Irrational Use of Drugs U 3

Survey of the fundamentals of drug action with special emphasis on drugs of abuse; discussion of medical, social, legal, and educational aspects of drug use.

Sp Qtr. 3 cl. Not open for credit to professional students in the College of Pharmacy. NS Admis Cond course.

### 400 Introduction to Pharmacy U 2

A survey of the profession of pharmacy, dealing with its history, educational requirements, organization, regulation, and current developments.

Sp Qtr. 2 cl. This course is graded S/U.

### 410 Introduction to Medicinal Chemistry U 3

Chemical and biochemical principles governing the design, synthesis and properties of drugs.

Sp Qtr. 3 cl, 1 recitation. Prereq: 462 and Chem 253. Enrollment restricted to students in the BSPS program or with permission of instructor.

### 411 Medicinal and Natural Products Chemistry Laboratory U 2

Laboratory experiences in the isolation and synthesis of pharmaceutically relevant compounds.

Au Qtr. 2 3-hr labs. Prereq: 410, 462, and Chem 253. Enrollment restricted to students in the BSPS program or with permission of instructor.

### 420 Pharmaceutics I U 4

Principles of pharmaceutics, the science of dosage form design.

Au Qtr. 2 2-hr cl, 1 recitation. Prereq: Physics 113 or 133, Chem 253, Math 152, Physiol 312 or EEOB 232 or Zoology 232. Enrollment restricted to students in the BSPS program or with permission of instructor.

### 421 Pharmaceutics Laboratory: U 2

An application of basic pharmaceutics principles and methods used to develop and evaluate drug, drug delivery systems and treatment regimens.

Wi Qtr. 1 cl, 1 3-hr lab. Prereq: 420. Enrollment restricted to students in the BSPS program or with permission of instructor.

### 461 Biomedical Chemistry I U 3

Fundamentals of biological chemistry for the study of pharmaceutical sciences.

Au Qtr. 3 1-hr cl, 1 recitation. Prereq: Chem 253. Enrollment restricted to students in the BSPS program or with permission of instructor.

### 462 Biomedical Chemistry II U 3

Fundamentals of biological chemistry for the study of pharmaceutical sciences.

Wi Qtr. 3 cl, 1 recitation. Prereq: 461. Enrollment restricted to students in the BSPS program or with permission of instructor.

### 471 Concepts in Pharmacology I: Discovery of Drug Action U P 2

Discussions and presentations on general principles and techniques used in pharmaceutical research.

Au Qtr. 2 cl. Prereq: Enrollment in College of Pharmacy.

### 472 Concepts in Pharmacology II: Pharmacology Literature U 2

Discussions and presentations dealing with recently published papers of general interest in the discipline of pharmacology.

Wi Qtr. 2 cl. Prereq or concur: 480 or equiv, or permission of instructor.

### 473 Concepts in Pharmacology III: Therapeutic Frontiers U P 2

Discussion of recent developments in one or more areas of pharmacology.

Sp Qtr. 1 2-hr cl. Prereq: Enrollment in College of Pharmacy.

### 480 Integrated Pharmacology U 3

An overview of pharmacological, biochemical, and physiological effects of drugs to facilitate an understanding of drug mechanism and pharmacotherapy.

Wi Qtr. 3 cl. Prereq: 461 or equiv; EEOB 232 or Zoology 232 or equiv. Enrollment restricted to students in the BSPS program or with permission of instructor.

### 481 Pharmacology Laboratory U 2

Laboratory experiences in studying the effects of drugs and their mechanisms of action.

Sp Qtr. 1 cl, 1 3-hr lab. Prereq: 480. Enrollment restricted to students in the BSPS program or with permission of instructor.

### 501 Pharmaceutics III P 3

The application of biopharmaceutics and pharmacokinetic principles to drug absorption, distribution, and elimination.

Au Qtr. 3 cl, 1 2-hr recitation. Prereq: 405 and 441.

**506 Pharmaceutics IV P 3**

The application of biopharmaceutical and pharmacokinetic theory to dosage regimen adjustment, drug and drug product selection, evaluation and use, and optimizing drug therapy.

Wi Qtr. 3 cl, 1 recitation. Prereq: 501.

**513 History of Pharmacy****513.01\* Lecture U P 3**

Evolution and development of the profession of pharmacy from antiquity to the present, with emphasis on its Anglo-American development since the 18th century.

Au Qtr. 3 cl. Prereq: Jr standing or permission of instructor.

**513.02 Laboratory U P 1**

The work of the pharmacist before the rise of modern pharmaceutical science.

Arr. 1 2-hr lab. Prereq: Jr standing or permission of instructor; prereq or concur: 513.01.

**513.03 Practicum U P 1**

Supervised discussions and demonstrations of 19th-century pharmaceutical techniques in a museum setting.

Su, Au, Sp Qtrs. 1 cl, field work arr. Prereq: Jr standing or permission of instructor; prereq or concur: 513.01 and 513.02. Repeatable to a maximum of 3 cr hrs. Students may obtain up to 500 hrs of internship or toward their Ohio State Board of Pharmacy internship requirement by participating in this course. This course is graded S/U.

**515 Pharmaceutical Distribution and Health Care Systems U 3**

A study of the pharmaceutical distribution system in the United States and its relation to the health care system.

Sp Qtr. 2 cl, 12-hr rec. Enrollment restricted to students in the BSPS program with at least rank III standing or with instructor's permission.

**546 Clerkship I U P 1**

The use of problem-solving skills to interpret and understand medical information in patient charts as related to specific disease processes.

Au Qtr. 1 cl or 1 2-hr workshop. Prereq: Jr standing or permission of instructor; concur: 516. This course is graded S/U.

**547 Clerkship II U P 1**

On-site/classroom evaluations of drug therapy, with an emphasis on development of verbal communication skills between pharmacists and patients, and utilization of drug information resources.

Wi Qtr. 1 cl or 12-hr workshop. Prereq: Jr standing or permission of instructor; concur: 517. This course is graded S/U.

**548 Clerkship III U P 1**

On-site evaluation of drug therapy in hospitalized or out-patients, with an emphasis on development of communication and decision-making skills.

Sp Qtr. 1 2-hr cl. Prereq: Jr standing or permission of instructor; concur: 518.

**601 Biopharmacy I P 3**

The first in a two-course sequence which provides the fundamental background in modern molecular life science required for pharmacy studies.

Au Qtr. 3 1-hr cl, 1 rec. Prereq: First-year standing in Pharm D program.

**602 Biopharmacy II P 3**

The second in a two-course sequence which provides the fundamental background in modern molecular life science required for pharmacy studies.

Wi Qtr. 3 1-hr cl, 1 rec. Prereq: First-year standing in Pharm D program.

**605 Medicinal Chemistry I P 3**

An introduction to functional group properties of importance to drugs, heterocycles, acidity and basicity, metabolism, prediction of ionization constants and physicochemical properties of drugs.

Au Qtr. 3 1-hr cl, 1 rec. Prereq: First-year standing in Pharm D program.

**606 Medicinal Chemistry II P 3**

Chemical and biochemical principles governing the properties of drugs. Drug categories include: CNS depressants, CNS stimulants, analgesics, and cardiac drugs.

Wi Qtr. 3 1-hr cl, 1 rec. Prereq: First-year standing in Pharm D program.

**607 Medicinal Chemistry III P 3**

Chemical and biochemical principles governing the properties of drugs. Drug categories include: cholesterol, adrenocorticoids, hormones, prostaglandins, analgesics, hypoglycemics, cancer agents, antihistamines, anticoagulants, and radiopharmaceuticals.

Sp Qtr. 3 1-hr cl, 1 rec. Prereq: First-year standing in Pharm D program.

**614\* Professional Ethics P 2**

The conceptual basis and content of pharmaceutical ethics; significance of codified ethics, interprofessionally considered; differences of view underlying ethical issues; methods of encouraging compliance.

Sp Qtr. 1 2-hr cl. Prereq: Jr standing or permission of instructor.

**616 Medical Applications of Radionuclides and Radiopharmaceuticals U P G 3**

A study of the theoretical and clinical aspects of the preparation, use, control, and handling of radionuclides and radiopharmaceuticals used in medicine.

Wi Qtr. 3 cl. Open to non-pharmacy students with instructor's permission.

**619 Nonprescription Drug Products P 3**

Didactic and practical experience in appropriate nonprescription drug product selection, monitoring, and patient information.

Au, Sp Qtrs. 2 2-hr cl. Prereq: 518 and 674 or concur with permission of instructor.

**621 Drug Delivery I P G 3**

Routes of drug administration and the principles of biological barriers to drug absorption.

Au Qtr. 3 1-hr cl, 1-hr rec Prereq: First-year standing in Pharm D program.

**622 Drug Delivery II P G 3**

Introduction to the physical-chemical principles of importance to drug delivery including physical properties, transport mechanisms, solubility, stability, viscosity and surface tension.

Wi Qtr. 2 1-hr cl, 1 2-hr workshop. Prereq: First-year standing in Pharm D program.

**623 Drug Delivery III P G 5**

The application of physical-chemical principles to pharmaceuticals and biopharmaceuticals: colloids, suspensions, emulsions, solid and topical drug delivery systems and the formulation factors affecting drug availability.

Sp Qtr. 3 cl, 2 2-hr workshops. Prereq: First-year standing in Pharm D program.

**624 Pharmaceutical Calculations P 1**

Introduction to prescription terminology and pharmaceutical calculations; emphasis on measurement systems, conversions, percent preparations, units of concentrations, calculation of doses, dilutions, milliequivalents, and milliosmoles.

Sp Qtr. 1 1-hr cl. Prereq: First-year standing in Pharm D program.

**625 Pharmaceutical Jurisprudence P 3**

A study of the laws and regulations relating to the practice of pharmacy with emphasis on cases and court decisions illustrating the pharmacist's responsibilities.

Au Qtr. 2 1.5-hr cl. Prereq: Sr standing.

**626 Drug Delivery Laboratory P G 2**

Laboratory reinforcement of the principles of drug delivery systems and their application to pharmacy practice.

Sp Qtr. 1 1-hr cl, 1 3-hr lab. Prereq: First-year standing in Pharm D program.

**661 Pharmacy Practice I P 3**

The first in a three-course sequence covering concepts fundamental to pharmacy practice. Topics include orientation to the profession, history, ethics, communications, and jurisprudence.

Au Qtr. 3 1-hr cl, 1 rec. Prereq: First-year standing in Pharm D program.

**662 Pharmacy Practice II P 3**

The second in a three-course sequence covering concepts fundamental to pharmacy practice with a focus on techniques used to evaluate the medical/pharmaceutical literature.

Wi Qtr. 3 1-hr cl. Prereq: First-year standing in Pharm D program.

**663 Pharmacy Practice III P 3**

The third in a three-quarter sequence covering concepts fundamental to pharmacy practice with a focus on self-care and communications.

Sp Qtr. 2 1-hr cl, 1 2-hr workshop. Prereq: First-year standing in Pharm D program.

**664 Introductory Pharmacy Practice Experience P 1**

Introductory experience in pharmacy practice including ambulatory, institutional and elective settings.

Au, Wi, Sp Qtrs. 4 hrs per week. Prereq: First-year standing in Pharm D program. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**677 Toxicology of Mutagens, Carcinogens, and Teratogens U P G 3**

Fundamentals of modern and environmental toxicology, emphasizing principles of teratology, carcinogenesis, and mutagenesis.

Su Qtr. 3 cl. Prereq: Physiol 312 or 602 or permission of instructor.

**681 Ocular Pharmacology and Toxicology P 3**

Principles of basic and applied aspects of ocular medications including toxicological consequences of acute and chronic drug actions.

Sp Qtr. 3 cl. Prereq: 2nd yr standing in optometry or permission of instructor. Open only to students registered in the College of Optometry.



**685 Community/Clinical Practice Externship P 5**

Pharmacy students, under the supervision of college faculty and community pharmacists, gain experience in community pharmacy practice.

Su, Au, Wi, Sp Qtrs. 3 or 4 wks minimum of 40 hr/wk. Prereq: 502, 506, 518, 674; licensure by the Ohio Board of Pharmacy as pharmacy intern; malpractice insurance coverage; satisfaction of health requirements; concur: 686 and 689. This course is graded S/U.

**686 Institutional/Clinical Practice Externship P 5**

Pharmacy students, under the supervision of college faculty and institutional pharmacists, gain experience in institutional (e.g., hospital, mental health facility) pharmacy practice.

Su, Au, Wi, Sp Qtrs. 3 or 4 wks minimum of 40 hr/wk. Prereq: 502, 506, 518, 674; licensure by the Ohio Board of Pharmacy as pharmacy intern; malpractice insurance coverage; satisfaction of health requirements; concur: 685 and 689. This course is graded S/U.

**689 Clinical Practice in Pharmacy P 5**

A basic clinical clerkship experience in various pharmacotherapeutic and clinical pharmacy practice areas with emphasis on an interdisciplinary health team approach.

Su, Au, Wi, Sp Qtrs. 4 wks minimum of 40 hrs/wk. Prereq: 502, 506, 518, 674; licensure by Ohio Board of Pharmacy as pharmacy intern; malpractice insurance coverage; satisfaction of health requirements; concur 685 and 686. This course is graded S/U.

**693 Individual Studies in the Pharmaceutical Sciences P 1-5**

Laboratory and library work designed to give the qualified student an opportunity to complete an original investigation or pursue an interest in a special problem.

Su, Au, Wi, Sp Qtrs. Prereq: Jr standing, a cumulative pt-hr ratio of 2.50, and permission of instructor. Repeatable to a maximum of 30 cr hrs. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies in Pharmacy U P 1-3**

Group studies of selected topics in various fields of pharmacy.

Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**695 Seminar in Clinical Pharmacy Career Pathways P 2**

Discussion and analysis of career pathways in clinical pharmacy and preparation of a career plan paper.

Sp Qtr. 2 cl. Prereq: 400 and soph standing.

**700 Pharmaceutical Care Longitudinal Course P 1**

An integrated course to guide students to develop and implement a strategy of a patient focused model of pharmacy practice to improve disease state management in their own practice site.

Su, Au, Wi Qtrs. Repeatable to a maximum of 8 cr hrs. Distance education (internet-based). This course is graded S/U.

**710 Pharmaceutical Biotechnology I P 3**

Products of biotechnology used as drugs, with an emphasis on immunoactive biomacromolecules employed in prevention, diagnosis and therapy of infectious, allergic, immunodeficiency and other diseases.

Au Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

**711 Pharmaceutical Biotechnology II P 3**

Products of biotechnology used as drugs, with an emphasis on antibiotics, anticancer agents and other important natural products employed in disease therapy.

Wi Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

**721 Drug Information and Drug Literature Review P 3**

Introduction to the broad range of medical and pharmaceutical literature; approaches to understanding and evaluating medical and pharmaceutical literature; demonstrates link between pharmaceutical care and drug information.

Wi Qtr. Repeatable to a maximum of 3 cr hrs. Distance education (internet based).

**731 Clinical Pharmacokinetics I P G 4**

The first in a three-course sequence in clinical pharmacokinetics and pharmacodynamics and their application to pharmacotherapy.

Au Qtr. 3 cl, 1 2-hr workshop. Prereq: Second-year standing in Pharm D program.

**732 Clinical Pharmacokinetics II P G 4**

The second in a three-course sequence in clinical pharmacokinetics and pharmacodynamics and their application to pharmacotherapy.

Wi Qtr. 3 cl, 1 2-hr workshop. Prereq: Second-year standing in Pharm D program.

**733 Clinical Pharmacokinetics III P G 3**

The third in a three-course sequence in clinical pharmacokinetics and pharmacodynamics and their application to pharmacotherapy.

Sp Qtr. 1 cl, 2 2-hr workshops. Prereq: Second-year standing in Pharm D program.

**734 Clinical Pharmacokinetics P 5**

Covers the basic principles of pharmacokinetics and demonstrates how this is integrated into patient care.

Au Qtr. Distance education (internet based).

**735 Drug Discovery and Drug Design P G 3**

A study of the discovery and design of new drugs; topics include natural products isolation, molecular modeling, molecular targets, and biosynthesis and metabolism.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**737 Advanced Pharmaceutical Analysis P G 5**

The use of specialized instruments in the assay and control methods of drugs and drug preparations.

Au Qtr. 3 cl, 2 3-hr lab. Prereq: Permission of instructor.

**745 Advanced Clinical Practice in Pharmacy**

Advanced clinical experience in various therapeutic and pharmacy practice areas.

1.5 months (fulltime). Prereq: Admission to Pharm D program; 743.13, 743.19, 743.20, 743.21, 743.22, 743.23, 743.24, and 743.27; or permission of instructor. Repeatable to a maximum of 24 cr hrs in any combination of decimal subdivisions

**745.02 Drug Information Service P 8**

Repeatable to a maximum of 24 cr hrs.

**745.03 Poison Control/Toxicology Service P 8**

Repeatable to a maximum of 24 cr hrs.

**745.04 Clinical Pharmacokinetics Laboratory P 8**

Repeatable to a maximum of 24 cr hrs.

**745.05 Pediatric Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.06 Cardiovascular Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.07 Critical Care Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.08 Psychiatric Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.09 Oncologic Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.10 Renal Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.11 Pulmonary Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.12 Infectious Disease Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.14 Parenteral Nutrition P 8**

Repeatable to a maximum of 24 cr hrs.

**745.15 Medical/Surgical Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.16 Applied Pharmacokinetics Service P 8**

Repeatable to a maximum of 24 cr hrs.

**745.17 Specialty Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.18 Pharmacoeconomics P 8**

Repeatable to a maximum of 24 cr hrs.

**745.19 Teaching Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.20 Internal Medicine Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.21 Neurology Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.22 Pharmaceutical Care P 8**

Repeatable to a maximum of 24 cr hrs.

**745.23 Anticoagulation Clinic Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.24 Emergency Medicine Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.25 Practice Management P 8**

Repeatable to a maximum of 24 cr hrs.

**745.26 Investigational Drug Service P 8**

Repeatable to a maximum of 24 cr hrs.

**745.27 Ambulatory Care Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.28 General Surgery Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.30 Transplant Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**745.31 Laboratory Clinical Pharmacy P 8**

Repeatable to a maximum of 24 cr hrs.

**747 Pharmacology I P G 3**

The first in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.

Au Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

**748 Pharmacology II P G 3**

The second in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.

Wi Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

**749 Pharmacology III P G 3**

The third in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.

Sp Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

**750 Pharmacology IV P G 3**

The fourth in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.

Au Qtr. 3 cl. Prereq: Third-year standing in Pharm D program.

**751 Pharmacology V P G 3**

The fifth in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.

Wi Qtr. 3 cl. Prereq: Third-year standing in Pharm D program.

**752 Pharmacology VI P G 3**

The sixth in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.

Sp Qtr. 3 cl. Prereq: Third-year standing in Pharm D program.

**773 Pharmacy Practice Management I P 3**

The first in a four-course pharmacy practice management sequence. Topics include the US health care and pharmaceutical distribution systems; product research, development and promotion.

Sp Qtr. 2 cl, 1 2-hr rec. Prereq: Second-year standing in Pharm D program.

**774 Professional Practice Laboratory I P 3**

The first in a three-course professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, extemporaneous compounding, and use of instruments and references.

Au Qtr. 2 cl, 1 3-hr lab. Prereq: Second-year standing in Pharm D program.

**775 Professional Practice Laboratory II P 3**

The second in a three-course professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, extemporaneous compounding, and use of instruments and references.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: Second-year standing in Pharm D program.

**776 Professional Practice Laboratory III P 3**

The third in a three-course professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, extemporaneous compounding, and use of instruments and references.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: Second-year standing in Pharm D program.

**777 Pathophysiology and Therapeutics I P 5**

The first in a six-course sequence in pathophysiology and pharmacotherapy. Development of patient assessment and problem solving skills to construct therapeutic plans.

Au Qtr. 2 cl, 3 2-hr workshops. Prereq: Second-year standing in Pharm D program.

**778 Pathophysiology and Therapeutics II P 4**

The second in a six-course sequence in pathophysiology and pharmacotherapy. Cardiovascular and renal disorders.

Wi Qtr. 3 cl, 1 3-hr case conference. Prereq: Second-year standing in Pharm D program.

**779 Pathophysiology and Therapeutics III P 4**

The third in a six-course sequence in pathophysiology and pharmacotherapy. Psychiatric and other central nervous system disorders.

Sp Qtr. 3 cl, 1 3-hr case conference. Prereq: Second-year standing in Pharm D program.

**780 Pathophysiology and Therapeutics IV P 4**

The fourth in a six-course sequence in pathophysiology and pharmacotherapy. Endocrine, hematologic, immunologic, obstetric/gynecologic and genitourinary disorders.

Au Qtr. 3 cl, 1 3-hr case conference. Prereq: Third-year standing in Pharm D program.

**781 Pathophysiology and Therapeutics V P 4**

The fifth in a six-course sequence in pathophysiology and pharmacotherapy. Infectious diseases, respiratory, bone and joint, dermatologic, eyes/ears/nose/throat disorders.

Wi Qtr. 3 cl, 1 3-hr case conference. Prereq: Third-year standing in Pharm D program.

**782 Pathophysiology and Therapeutics VI P 5**

The sixth in a six-course sequence in pathophysiology and pharmacotherapy. Oncologic, fluid and electrolyte, gastrointestinal, and multi-system disorders.

Sp Qtr. 4 cl, 1 3-hr case conference. Prereq: Third-year standing in Pharm D program.

**784<sup>A</sup> Intermediate Pharmacy Practice Experience P 1**

Intermediate experience in pharmacy practice including ambulatory, institutional and elective settings.

Au, Wi, Sp Qtrs. 4 hrs per week. Prereq: Third-year standing in Pharm D program. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**786 Pharmacy Practice Management II P 3**

The second in a four-course sequence in pharmacy practice management. Topics include client, marketing and personnel management; medication use system, medication safety and process improvement.

Au Qtr. 2 cl, 1 2-hr rec. Prereq: Third-year standing in Pharm D program.

**787 Pharmacy Practice Management III P 3**

The third in a four-course sequence in pharmacy practice management. Topics relate to resource management.

Wi Qtr. 2 cl, 1 2-hr rec. Prereq: Third-year standing in Pharm D program.

**788 Pharmacy Practice Management IV P 3**

The fourth in a four-course sequence in pharmacy practice management. Topics relate to the economic evaluation of pharmaceutical services.

Sp Qtr. 2 1.5-hr cl. Prereq: Third-year standing in Pharm D program.

**789 Isolation Techniques in Research P G 5**

A study and application of selected isolation techniques for the purification of natural products or other organic mixtures.

Wi Qtr. 3 cl, 2 3-hr lab. Prereq: Chem 253 and 244 or 246 or 255, or equiv, or permission of instructor.

**790 Pharmaceutical Jurisprudence P 3**

A study of the laws and regulations relating to the practice of pharmacy.

Sp Qtr. 3 cl. Prereq: Third-year standing in Pharm D program.

**794 Group Studies in Clinical Pharmacy P 1-18**

Prereq: Admission to Pharm D program. Repeatable to a maximum of 50 cr hrs.

**795 Seminar**

Seminar dealing with clinical pharmacy topics.

1 1-hr seminar. Prereq: Admission to Pharm D program or permission of instructor.

**795.01 Presentation P 1**

Seminar designed to develop speaking and scientific presentation abilities of Pharm D students through presentation of research and therapeutic material.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 2 cr hrs.

**795.02 Participation P 1**

Participation in seminar on therapeutic material.

Au, Wi Qtrs. This course is graded S/U.

**799 Advanced Pharmacy Practice Experience**

Advanced pharmacy practice experience rotations including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Su, Au, Wi, Sp Qtrs. 40 hrs per week. Prereq: Fourth-year standing in Pharm D program.

**799.01 Practice Experience I P 10**

First required advanced practice rotation. A 2 month rotation.

This course is graded S/U.

**799.02 Practice Experience II P 10**

Second required advanced practice rotation. A 2 month rotation.

This course is graded S/U.

**799.03 Practice Experience III P 5**

Third required advanced practice rotation. A 1 month rotation.

This course is graded S/U.

**799.04 Practice Experience IV P 5**

Fourth required advanced practice rotation. A 1 month rotation.

This course is graded S/U.

**799.05 Practice Experience V P 5**

Fifth required advanced practice rotation. A 1 month rotation.

This course is graded S/U.

**799.06 Practice Experience VI P 5**

Sixth required advanced practice rotation. A 1 month rotation. This course is graded S/U.

**799.07 Practice Experience VII P 5**

Seventh required advanced practice rotation. A 1 month rotation or a longitudinal advanced practice scheduled over more than 1 quarter. This may be a Progress course. This course is graded S/U.

**799.08 Practice Experience VIII P 5**

Optional/additional advanced practice rotation. This course is graded S/U.

**799.09 Practice Experience IX P 1-5**

Optional longitudinal advanced practice scheduled over more than 1 quarter. Repeatable to a maximum of 5 cr hrs. This is a Progress course.

**800 Radioisotope Tracer Techniques and Radiopharmaceuticals**

A survey of the properties of radioisotopes and radiation; radioisotope tracer methods and applications to pharmaceutical sciences; the preparation, standardization, and handling of radiopharmaceuticals.

Au Qtr. 3 cl, 2 3-hr lab. Prereq: Permission of instructor.

**800.01 Principles of Radioisotope Tracer Techniques G 3**

A survey of properties of radioisotopes and radiation, instrumentation used for detection of radioisotopes, and radioisotope tracer methods and applications to biomedical sciences.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**801\* Physical Pharmacy G 3**

Presentation of some basic principles and techniques used in pharmaceutical research and product development: drug stabilization, solubilization, complexation, and macromolecule interactions.

Au Qtr. 3 cl. Prereq: 506 or equiv with written permission of instructor.

**802\*\* Pharmacokinetics G 4**

The analysis of the absorption, distribution, and elimination of drugs, and the mathematical characterization of these processes, with emphasis on theory and application.

Au Qtr. 2 2-hr cl. Prereq: 674 and Math 152, or equivalents with written permission of instructor.

**803\*\* Disposition of Xenobiotics G 3**

Principles and practical considerations in the study of xenobiotic pharmacokinetics and metabolism; current research approaches and techniques.

Sp Qtr. Arr.

**804\* Drug Transport G 3**

Theories and experimental approaches for the characterization of drug transport in biological and pharmaceutical systems.

Wi Qtr. 3 cl.

**805\* Controlled Drug Delivery G 3**

Principles of the controlled release of drugs from polymer systems. Physical-chemical and engineering approaches are used to evaluate systems from experimental and theoretical viewpoints.

Sp Qtr. 2 1.5-hr cl arr. Repeatable to a maximum of 6 cr hrs.

**806 Advanced Bioanalysis**

Theory and practice of quantitative pharmaceutical and bioanalytical analysis in biological samples with emphasis on modern methods.

Sp Qtr.

**806.01\* Principles of Advanced Bioanalysis G 4**

Sp Qtr. 2 1.5-hr cl. Prereq: Chem 253, 531, 532, Biochem 721.01, 721.02.

**806.02\* Laboratory in Advanced Bioanalysis G 2**

Laboratory applications of pharmaceutical and bioanalytical methods.

Sp Qtr. Arr lab. Prereq or concur. 806.01 and permission of instructor

**807\*\* Drug Equilibria in Biological Systems G 3**

In depth evaluation of the current literature of methods and techniques of evaluating drug interactions with blood components and receptors.

Sp Qtr. 2 1.5-hr cl.

**808\*\* Pharmacokinetic-Pharmacodynamic Models G 3**

Mathematical models and experimental approaches for characterization of the time course of drug effects.

Wi Qtr. 2 1.5-hr cl. Prereq: 802. Offered alternate years, starting Wi '01.

**812 Advanced Pharmacy G 3**

A study of the methods used to predict, determine, and improve the stability characteristics of medicinal agents in dosage form.

Sp Qtr. 3 cl. Prereq: Chem 521 or 533, and permission of instructor.

**816 Client, Marketing and Personnel Management in Pharmacy P G 4**

Topics include client, marketing and personnel management and medication use system, medication safety and process improvement.

Au Qtr. 2 1-hr cl, 1 2-hr rec, 1 hr workshop.

**817 Pharmacy Management Systems G 4**

Administrative and professional principles and concepts of, and trends affecting pharmacy and health care.

Wi Qtr. 2 1-hr cl, 1 2-hr cl. Prereq: 816.

**821 Research Methods and Literature Evaluation P G 4**

Investigation of the research principles and methods involved in planning, analysis, and interpretation of studies and projects in pharmacy practice.

Wi Qtr. 3 1-hr cl, 1 workshop.

**824 Economic Evaluation of Health Care Programs and Services G 4**

Overview and appraisal of the state-of-the art in the evaluation of health care programs and services.

Sp Qtr. 2 2-hr cl. Cross-listed in Health Services Management and Policy.

**825 Drug Distribution and Public Policy P G 4**

Investigation of pharmaceutical markets with an emphasis on drug distribution and public policies affecting pharmaceutical firms.

Sp Qtr. 2 1-hr cl, 1 2-hr rec, 1 workshop.

**826 Advanced Topics in Pharmaceutical Administration G 2**

Investigation and analysis of selected topics in pharmaceutical administration.

Su, Au, Wi, Sp Qtrs. 3 cl. Repeatable to a maximum of 12 cr hrs.

**835 Advanced Medicinal Chemistry G 3**

Selected topics on the chemistry of drug design and discovery: the subject matter drawn from the current literature on chemical and structural aspects of medicinal chemistry.

Au Qtr. 3 cl. Prereq: 674 or equiv, and Chem 833; or permission of instructor.

**836 Advanced Medicinal Chemistry G 3**

Selected topics in medicinal chemistry, the subject matter being drawn from the current literature.

Wi Qtr. 3 cl. Prereq: 674 or equiv, and Chem 833; or permission of instructor.

**839 Problem Solving in Natural Products Chemistry G 2**

Discussion of weekly assigned problem sets in disciplines relevant to natural products chemistry.

Su, Au, Wi, Sp Qtrs. 2-hr cl. Prereq: Chem 730, Biochem 613 or permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**850 Seminar**

Round-table discussion, oral and written reports dealing with recent advances in the pharmaceutical sciences.

Su, Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 30 cr hrs.

**850.01 Presentation G 1**

Presentation of oral and written reports dealing with recent advances in the pharmaceutical sciences.

Repeatable to a maximum of 30 cr hrs.

**850.02 Participation G 1**

Participation in round-table discussion, oral, and written reports dealing with recent advances in the pharmaceutical sciences.

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**851 Advanced Pharmacognosy G 3**

A study of research involving biosynthesis of plant constituents of pharmaceutical interest.

Sp Qtr. 3 cl. Prereq: Biochem 707 or Botany 631 or permission of instructor.

**870 Molecular Pharmacology of Drug-Receptor Interactions G 3**

Integrates mathematical, biochemical, and molecular biological approaches in an effort to achieve a general appreciation of the mechanisms and signaling pathways by which drug-receptor interactions ultimately lead to therapeutic effects.

Au Qtr. 3 cl. Prereq: Math 152 or equiv and an introductory course in pharmacology; or permission of instructor.

**871 Experimental Methods in Pharmacology G 4**

Qualitative and quantitative pharmacology covering the standard laboratory methods used in the screening and evaluation of drugs.

Wi Qtr. 12-hr cl, 1 6-hr lab. Prereq: 870 or equiv, and permission of instructor.

**872 Advanced Methods in Pharmacology G 3**

Theory and practical application of specialized pharmacological approaches used for the elucidation of mechanisms of drug action.

Sp Qtr. 1 cl, 2 3-hr lab. Prereq: 871 and permission of instructor.

**881 Advanced Topics in Pharmacology G 3**

A study of current advanced theories of pharmacodynamics.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 871 and permission of instructor. Repeatable to a maximum of 9 cr hrs.

**884 Field Experiences in Pharmaceutical Administration G 6**

Supervised practicum in an administrative setting within the pharmaceutical industry.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 25 cr hrs of course work in pharmacy administration and enrollment in pharmacy administration specialization. This course is graded S/U.

**894^ Group Studies in Pharmaceutical Sciences G 1-5**

Group studies of selected topics in various fields of the pharmaceutical sciences.

Su, Au, Wi, Sp Qtrs. 1-5 cl, opt lab. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**970 Supervised Project in Hospital Pharmacy G 3**

Investigation of a major problem facing a hospital pharmacy or pharmacy practice.

Su, Au, Wi, Sp Qtrs. Prereq: 2nd yr standing in hospital pharmacy specialization. Required of all students specializing in hospital pharmacy; must be taken each qtr of 2nd yr. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**993^ Individual Studies in the Pharmaceutical Sciences G 1-5**

Individual investigation of problems in one of the areas below:

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

A - Pharmaceutical Administration

B - Medicinal Chemistry and Pharmacognosy

C - Pharmaceutics and Pharmaceutical chemistry

D - Pharmacology

E - Pharmacy Practice

**999 Research in the Pharmaceutical Sciences G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable. This course is graded S/U.

## Philosophy

350 University Hall, 230 North Oval Mall, 292-7914

General Prerequisites for Courses Numbered 600 and 700

Not open to freshmen or sophomores. Unless otherwise indicated the prerequisites for 600- and 700-level courses are 10 hours in philosophy.

General Prerequisites for Courses Numbered 800 and 900

Unless otherwise indicated the prerequisites for 800- and 900-level courses are acceptable foundation courses either in general philosophy, logic and ethics, or history of philosophy, and in some cases in all these subjects.

**101 Introduction to Philosophy U 5**

Examination of major problems, such as the nature of reality, knowledge, truth, morality, and the relation of philosophy to science and religion.

H101 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 100. GEC arts and hums cultures and ideas course.

**H111 Mind and Its Place in Nature: Western Conceptions of the Self from Antiquity to the Present: Part I U 5**

Focuses on how changing conceptions of human self-understanding have affected developments in the sociopolitical, cultural, and economic realms, and vice-versa; close of the classical world to the modern age.

5 cl. Prereq: Honors standing or permission of instructor. GEC historical survey course.

**H112 Mind and Its Place in Nature: Western Conceptions of the Self from Antiquity to the Present: Part II U 5**

Focuses on how changing conceptions of human self-understanding have affected developments in the sociopolitical, cultural, and economic realms, and vice-versa; the modern age to the 20th century.

5 cl. Prereq: H111. GEC historical survey course.

**130 Introduction to Ethics U 5**

The nature of right and wrong, good and evil; the grounds of moral choice and decision; the resolution of moral conflicts.

H130 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums cultures and ideas course.

**150 Introduction to Logic U 5**

Deduction and induction: principles of clear statement and valid reasoning; fallacies; and the methods by which theories and laws are established.

Prereq: Math 075 or 102 or equiv. GEC math and logical analysis course.

**153 Probability, Data, and Decision Making U 5**

How to make rational decisions when confronted by uncertainty; foundational issues and techniques pertaining to probability, selection of utilities and analysis of data relevant to decision making.

Prereq: Mathematics Placement Level L, M, N, or R; or Math 104. GEC data analysis course.

**215 Asian Philosophies U 5**

A survey including at least three of the following major philosophical systems of Asia: Hinduism, Buddhism, Jainism, Zoroastrianism, Taoism, and Confucianism.

GEC arts and hums lit course.

**230 Political and Social Philosophy U 5**

Philosophical bases of social and political institutions and practices; analysis of such fundamental conceptions as rights, justice, equality, political obligation, and civil disobedience.

Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

**240 Philosophical Problems in the Arts U 5**

An introduction to major philosophical issues in the arts; examination of artistic intention, representation vs. abstraction, the grounds and objectives of art criticism, and the import of cultural differences in light of their application to specific works in the various arts.

H240 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums VPA course.

**H242 Honors Philosophy of Film U 5**

An introduction to philosophical and aesthetic issues involved with film as an art and as an expressive medium.

Sp Qtr. 2-2-hr cl, arr viewing time. Prereq: Enrollment in an honors program or permission of instructor. GEC arts and hums VPA course.

**250 Symbolic Logic U 5**

A formal presentation of the elements of modern and classical deductive logic; decision and proof procedures in sentential logic, functional logic, and Aristotelian logic.

GEC math and logical analysis course.

**255 Introduction to the Philosophy of Science U 5**

A survey of the main philosophical problems relating to the natural sciences.

Prereq: 5 cr hrs in logic or math above 104, and 5 cr hrs in natural science or permission of instructor.

**270 Introduction to Philosophy of Religion U 5**

A philosophical analysis of the nature of religion and the foundations of religious belief.

Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

**H276 Freshman-Sophomore Proseminar U 5**

Topic varies; emphasis on current philosophical problems.

Prereq: Fr or soph standing, and either a 3.00 CPHR, enrollment in an honors program, or permission of instructor. Not open to students with credit for H570. Repeatable to a maximum of 15 cr hrs.

**294 Group Studies U 1-5**

Groups of students are given an opportunity to pursue special topics not otherwise offered.

Repeatable to a maximum of 15 cr hrs.

**301 History of Ancient Philosophy U 5**

Major figures and issues in Greek philosophy; presocratics, Socrates, Plato, Aristotle.

Prereq: 5 cr hrs of philos other than 150 or permission of instructor. Not open to students with credit for 311 or 511. GEC arts and hums lit course.

**302 History of Medieval Philosophy U 5**

Major figures in medieval philosophy, including Augustine, Aquinas, Duns Scotus, and Ockham.

Prereq: 5 cr hrs of philos other than 150 or permission of instructor. Not open to students with credit for 312, or 512, or 614 taken prior to Su Qtr 1990. GEC arts and hums lit course.

**303 History of 17th-Century Philosophy U 5**

Major figures in early modern philosophy: Descartes, Hobbes, Spinoza, Locke, and Berkeley.

Prereq: 5 cr hrs of philos other than 150 or permission of instructor. Not open to students with credit for 313, or 512 taken prior to Su Qtr 1990, or 513. GEC arts and hums lit course.

**304 History of 18th-Century Philosophy U 5**

Major figures in European philosophy in the 17th and 18th centuries.

Prereq: 5 cr hrs of philos other than 150 or permission of instructor. Background in 304 strongly recommended. Not open to students with credit for 314 or 514. GEC arts and hums lit course.

**305 History of 19th-Century Philosophy U 5**

Major figures in 19th-century German idealism.

Prereq: 5 cr hrs of philos other than 150 or permission of instructor. Not open to students with credit for 315 or 515. GEC arts and hums lit course.

**306 Fundamental Concepts of Existentialism U 5**

Key concepts of the movement: commitment, absurdity, freedom, and death, as expressed in the works of Nietzsche, Sartre, Camus, Kierkegaard and others.

Prereq: 5 cr hrs of philos other than 150, or permission of instructor. Not open to students with credit for 217. GEC arts and hums lit course.

**307 Contemporary Continental Thought U 5**

Examination of contemporary continental thought including such movements as: structuralism, hermeneutics, critical theory, poststructuralism, semiotics, deconstruction, and postmodernism.

Prereq: 5 cr hrs of philos other than 150 or permission of instructor. GEC arts and hums lit course.

**321 Introduction to Jewish Philosophy U 5**

A general introduction to major figures and trends in medieval, modern, and contemporary Jewish philosophy; emphasis on Philo, Saadia, Maimonides, Spinoza, Mendelssohn, and Buber.

Not open to students with credit for 361.

**322\* Jewish Mysticism U 5**

Introduction to issues and texts in the Jewish mystical tradition, with emphasis on the Zohar, Lurianic, Kabbalah, and Hasidism.

Not open to students with credit for 360.

**323 Judaism and Ethics U 5**

Examination of the relationships of ethics to religion in general and Judaism in particular, emphasizing the place of ethical reasoning within Judaism as a religious system.

**338 Philosophical Problems in the Law U 5**

Introduction to the nature of law and the philosophical and moral problems concerning law; justification of civil disobedience, criminal punishment, plea bargaining, and the enforcement of morality.

Not open to students with credit for 368.

**367 Contemporary Social and Moral Problems in the U.S. U 5**

An intensive writing course concentrating on the analysis and evaluation of philosophical argumentation concerning contemporary social and moral problems about race, gender, class, and ethnicity.

Prereq: English 110 or 111 or equiv; and soph standing or above. Not open to students with credit for this topic under Philos 294, Su Qtr 1995. Cannot be counted on a philosophy major or minor program. GEC second writing and social diversity course.

**431 Ethical Theory U 5**

Advanced introduction to the major issues in ethical theory: the relation between value and obligation, the nature and justification of moral judgment, etc.

Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150, or permission of instructor. Not open to students with credit for 331.

**455 Philosophy of Science U 5**

A rigorous introduction to general methodological issues in the philosophy of science.

Prereq: 250 and either a major in philos or 15 cr hrs of philos course work exclusive of 150; or permission of instructor.

**460 Introduction to Theory of Knowledge U 5**

Survey of main philosophical positions, concerning knowledge, justification, skepticism, and rationality.

Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150, or permission of instructor. Not open to students with credit for 362 or 462.

**463 Introduction to Metaphysics U 5**

Survey of main philosophical positions concerning the nature of reality, persons, freedom, identity, and causation.

Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150, or permission of instructor. Not open to students with credit for 363.

**467 Introduction to Philosophy of Mind U 5**

General introduction to the philosophy of mind, the mind-body problem, intentionality, and the nature of consciousness.

Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150, or permission of instructor. Not open to students with credit for 364 or 464.

**473 Introduction to Philosophy of Language U 5**

Survey of philosophical issues regarding the nature of linguistic representation and its role in thought and communication.

Prereq: 250 and 10 cr hrs of philos course work exclusive of 150, or permission of instructor. Not open to students with credit for 373.

**506\* Phenomenology and Existentialism U G 5**

Early existentialist ideas of Kierkegaard and Nietzsche; Husserl's phenomenological method and critical analyses of works of philosophers such as Heidegger, Jaspers, Sartre, Beauvoirs, and others.

Prereq: 5 cr hrs of philos exclusive of 150 and 250 or grad standing or permission of instructor. Not open to students with credit for 617.

**518\* Movements in 20th-Century Philosophy U G 5**

Three or more of the following Anglo-American and European philosophical movements will typically be surveyed: existentialism, philosophical analysis, positivism, marxism, pragmatism, linguistic philosophy.

**520\* American Philosophy U G 3**

The development of American philosophy: puritanism, deism, transcendentalism, and pragmatism.

Not open to students with credit for 613.

**521 Topics in Jewish Philosophy U G 5**

An examination of a philosophical issue in Jewish thought or of the thought of a particular author; topics vary.

Prereq: 302 or 321, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**530 Marxism U G 5**

A general introduction to the Marxist tradition in Europe and the U.S.

Prereq: 5 cr hrs in the history of philos or permission of instructor. Not open to students with credit for 625.

**532 Moral Problems of the Health Professions U G 5**

An examination of some moral problems that arise in the health professions, along with the codes, theories, and reasoning involved in their resolution.

Prereq: 130 or 431; or permission of instructor. Designed for students in medicine, nursing, clinical psych, social work, guidance and counseling, and the health professions.

**533 Environmental Ethics U G 5**

Examination of the moral issues generated by the impact of human beings on the natural environment.

Prereq: 130 or 431, or permission of instructor. Not open to students with credit for 633.

**553 Theory of Rational Choice U G 5**

Introduction to the principles and methods of the theory of rational choice; with applications in the theory of knowledge; ethics, and social and political philosophy.

Prereq: Jr or above standing or permission of instructor.

**H580 Ethical Conflicts in Health Care Research, Policy, and Practice U 5**

An interdisciplinary approach to an analysis of central moral dilemmas in health care research, policy, and practice.

Prereq: Jr or sr standing and either 130 or permission of instructor. Not open to students with credit for Nursing H580. Cross-listed in Nursing.

**595 Theorizing Race U G 5**

Introduction to issues of "race," consideration of the historical emergence and development of ideas of "race" and of racist practices, along with their contemporary formations.

Sp Qtr. 2 2-hr cl. Prereq: GEC second writing course, 230 or AfAm&ASt 395, or permission of instructor. Not open to students with credit for AfAm&ASt 595. Cross-listed in African-American and African Studies.

**597 Issues of the Contemporary World**

Prereq: Sr standing. GEC contemporary world course.

**H597.03 Interdisciplinary Perspectives on Current Issues U 5**

Team-taught interdisciplinary and cross-cultural course on the relations among politics, ethics, rhetoric, and law as they confront current practical issues.

Not open to students with credit for English H597.03 or Polit Sc H597.03. Cross-listed in English and Political Science.

**601 Ancient Philosophy**

Prereq: 301 or 10 cr hrs of philos at the 200 level; or above or grad standing in philos; or permission of instructor.

**601.01 Plato U G 5**

A survey of central philosophical themes in one or more Platonic dialogues. Not open to students with credit for 712.

**601.02 Aristotle U G 5**

A survey of central philosophical themes in one or more Aristotelian treatises.

Not open to students with credit for 713.

**601.03 Studies in Ancient Philosophy U G 5**

Variable content; special topics in ancient Greek philosophy, including value theory, logic, metaphysics and natural science in pre-Socratics, Socrates, Plato, Aristotle the Hellenistic schools or neo-Platonism. Repeatable to a maximum of 15 cr hrs.

**602 Studies in Medieval Philosophy U G 5**

An intensive examination of a major philosopher, school or philosophical problem of the medieval period; topics vary. Prereq: 302 and 10 cr hrs of philos course work at the 200 level or above; or grad standing in philos; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**603 Studies in 17th-Century Philosophy U G 5**

An intensive examination of a major philosopher or philosophical problem of the rationalist period; topics vary from quarter to quarter. Prereq: 303 and 10 cr hrs of philos course work at the 200 level or above; or grad standing in philos; or written of instructor. Repeatable to a maximum of 15 cr hrs.

**604 Studies in 18th-Century Philosophy**

**604.01 Kant U G 5**

An intensive examination of one or more important themes in Kant's philosophical writings. Prereq: 303, or 304, and 10 cr hrs of philos course work at the 200 level or above; or grad standing in philos; or permission of instructor. Not open to students with credit for 722.

**604.02 Selected Problems or Topics U G 5**

An intensive examination of a major philosopher or philosophical problem of the period; topics vary from quarter to quarter. Prereq: 304 and 10 cr hrs of philos course work at the 200 level or above or grad standing in philos or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**605 Studies in 19th-Century Philosophy U G 5**

An intensive examination of a major philosopher or philosophical problem of the period; topics vary from quarter to quarter. Prereq: 305 and 10 cr hrs of philos course work at the 200 level or above or grad standing in philos or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**606 Studies in 20th-Century Philosophy U G 5**

An intensive examination of one or more central movement in 20th-century philosophy; topics vary. Prereq: 15 cr hrs of philos course work at the 200 level or above, or grad standing in philos or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**612 Introduction to Cognitive Science U G 3**

Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.

Prereq: Permission of instructor or a total of 12 cr hrs from at least two of the following areas: cptr/inf, linguist, philos, and psych. Not open to students with credit for Cptr/Inf 612, Linguist 612, or Psych 612 or 794 (Sp Qtr 1989) or 794A (Wi Qtr 1990). Cross-listed in Computer and Information Science, Linguistics, and Psychology.

**630 Advanced Political and Social Philosophy U G 5**

An intensive examination of issues in political and social philosophy, including democracy, civil disobedience, anarchism, totalitarianism, nature of the state, etc.

Prereq: 230 and 10 cr hrs of philos course work at the 200 level or above; or grad standing in philos; or permission of instructor, and English 110 or 111 or equiv.

**631 Advanced Ethical Theory U G 5**

An intensive examination of representative ethical systems such as egoism, hedonism, intuitionism, and utilitarianism.

Prereq: 431 and 10 cr hrs of philos course work at the 200 level or above or grad standing in philos or permission of instructor.

**638 Advanced Philosophy of Law U G 5**

An examination of the nature and function of law and of such problems as the relation of law to morality and the justification of punishment.

Prereq: 338 and 10 cr hrs of philos coursework at the 200 level or above; or grad standing; or equiv or permission of instructor. Not open to students with credit for 668.

**640 Advanced Esthetic Theory U G 5**

Ea: c issues in philosophy of art: the definition of art; meaning, truth, and representation in art; the nature and basis of criticism; the criteria of interpretation of works of art.

Prereq: 15 cr hrs of philos course work at 200 level or above; grad standing in philos; or permission of instructor. Not open to students with credit for 641.

**650 Advanced Symbolic Logic U G 5**

Introduction to the metatheory of first-order logics and languages: axiomatic development of propositional and predicate logic; model theory; soundness, completeness, and Lowenheim-Skolem theorems. Prereq: 250.

**652 Nonclassical Logic U G 5**

Study of selected systems of nonclassical logic, such as entailment systems, modal, many-valued, epistemic, deontic, imperative, erotetic, tense, and free logics.

Prereq: 650. Repeatable to a maximum of 10 cr hrs.

**653\* Inductive Logic and Probability U G 5**

An analysis of selected systems of inductive inference; the probability calculus and its interpretations; confirmation theory. Prereq: 150 or permission of instructor.

**654 Philosophy of Logic and Mathematics U G 5**

Analysis of basic concepts used in logic and in philosophical claims about logic and mathematics, such as: proposition, logical truth, mathematical objects, and necessity.

Prereq: 650.01 or permission of instructor. Not open to students with credit for 674.

**655 Advanced Philosophy of Science U G 5**

A study of the nature and structure of scientific concepts, laws, and theories; appraisal of methodologies, presuppositions, and frames of reference in science.

Prereq: 250 and 10 cr hrs of philos course work at the 300 level or above (preferably 455); or 250 and grad standing in philos; or permission of instructor. Not open to students with credit for 676.

**660 Advanced Theory of Knowledge U G 5**

A survey of major epistemological problems: the possibility, origin, foundation, structure, methods, limits, types, and validity of knowledge.

Prereq: 250 and 10 cr hrs of philos course work at the 300 level or above (preferably 460); or grad standing; or permission of instructor.

**663 Advanced Metaphysics U G 5**

A survey of major metaphysical problems: categories, universals, substance and process, causality and law, space and time, metaphysical presuppositions of knowledge.

Prereq: 250 or 10 cr hrs of philos course work at the 300 level or above (preferably 463); or grad standing; or permission of instructor.

**667 Advanced Philosophy of Mind U G 5**

Classical and contemporary approaches to the nature of mind, mind-body, other minds, intentionality, and other problems.

Prereq: 15 cr hrs of philos course work at the 300 level or above (preferably 467); or grad standing in philos; or permission of instructor. Not open to students with credit for 767.

**670 Philosophy of Religion U G 5**

A study of religious concepts and problems; the idea and nature of God, of humans, their relation to the world and human destiny.

Prereq: 250 and 10 credit hrs of philos course work at the 300 level or above; or grad standing; or permission of instructor. Not open to students with credit for 675.

**672 Philosophy in Literature U G 5**

Philosophical problems as reflected in classics of literature, such as the Greek dramatists, Shakespeare, Voltaire, T. S. Eliot, Proust, and Tolstoy.

Prereq: 10 cr hrs of philos course work at the 300 level or above; or grad standing; or permission of instructor.

**673 Advanced Philosophy of Language U G 5**

Basic problems and results in the philosophy of language, concentrating on theories of reference, theories of meaning, and theories of language-use (speech-acts, implicature, etc.).

Prereq: 250 and 10 credit hrs of philos course work at the 300 level or above (preferably 473); or grad standing in philos; or permission of instructor.

**H678 Junior-Senior Proseminar U G 3-5**

Topics vary; emphasis on recent philosophical writing in some specific area or on some specific problem.

Prereq: Honors level standing and 10 cr hrs in philos course work at or above the 200 level; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies U G 1-10**

Prereq: Permission of dept chairperson. Students ordinarily earn from 1 to 5 cr hrs, but honors students may earn up to 10 cr hrs. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 First-Year Seminar G 5**

A topically variable introduction to advanced philosophical methodology. Open only to first-year philosophy grad students.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of cognitive science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Prereq: Cptr/Inf 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Linguistics, Psychology, and Speech and Hearing Science.

**750 Advanced Logical Theory U G 5**

Topics include formal arithmetic, recursive functions, Turing machines, Godel's incompleteness theorems, Church's thesis, arithmetical truth, logical paradoxes, and higher-order logic.

Prereq: 250 and 650. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of reading arranged for each student, with individual conferences, reports, and papers.

Prereq: 4th yr standing with a grade of A in at least half of the philos courses taken and with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the BA with distinction in philos. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**800 Current Philosophical Literature G 1**

Current philosophical journal articles will be read and discussed.

Repeatable to a maximum of 6 cr hrs.

**801 Seminar in the History of Philosophy G 5**

Prereq: Grad standing in philos or permission of instructor.

Repeatable to a maximum of 30 cr hrs.

**830 Seminar in Value Theory G 5**

Prereq: Grad standing in philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**850 Seminar in Logic G 5**

Prereq: Grad standing in philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**855 Seminar in Philosophy of Science G 5**

Prereq: Grad standing in philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**860 Seminar in Theory of Knowledge G 5**

Prereq: Grad standing in philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**863 Seminar in Metaphysics G 5**

Prereq: Grad standing in philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**873 Seminar in Philosophy of Language G 5**

Prereq: Grad standing in philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**875 Seminar in the Philosophy of Religion G 5**

Repeatable to a maximum of 15 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**993 Individual Studies G 2-15**

Doctoral students may register for individual study in areas not normally covered by courses.

Prereq: An MA degree or at least 50 cr hrs of grad study, and permission of dept chairperson. This course is graded S/U.

**999 Research in Philosophy G 1-18**

Research for thesis or dissertation purposes only.

Repeatable. This course is graded S/U.

## Physical Medicine and Rehabilitation

1012 Dodd Hall, 480 W. 9th Avenue, 293-3801

**736\* Clinical and Physiologic Bases of Physical Treatment P G 3**

The indications for, and choice of, physical modalities.

Au Qtr. 1 3-hr cl. Prereq: Grad or professional status and written permission of instructor. Offered odd numbered years.

**745 Biophysical Basis of Physical Treatment P 6,12,18**

The student will design and complete a laboratory or library research problem involving the biophysical aspects of physical diagnosis or treatment. Colachis. 1, 2, or 3 months; offered all months.

Prereq: Grad or professional standing and permission of instructor. This course is graded S/U.

**750\*\* Natural History of Disability P G 3**

An analysis of the nature, patterns and evaluation of disability, the processes involved, and the factors influencing its course.

Su Qtr. Even years; 1 3-hr cl. Prereq: Grad or professional status and written permission of instructor.

**760\* Basic Prosthetics and Orthotics P G 3**

In-depth study of prosthetics and orthotics including evaluation of the patient, indications for fitting of specific devices, and components, fabrication techniques, and follow-up. Levy and staff.

Sp Qtr. 1 3-hr cl. Prereq: Grad or professional standing and written permission of instructor. Offered odd years.

**770 Instrumentation, Neurophysiology, Clinical Aspects of Electromyography P G 3**

In-depth study of the instrumentation and correlation of neurophysiology and clinical aspects of electromyography, including excitable membranes, biological potentials, and nerve stimulation in clinical disorders.

Wi Qtr. 1 3-hr cl. Prereq: Grad or professional status and written permission of instructor.

**780\* Psychological Aspects of Physical Disability and its Management by Physicians P G 3**

Designed to synthesize and summarize various aspects of advances in the behavioral sciences which have practical application to the rehabilitation of physical disabilities.

Su Qtr. Odd years; 1 3-hr cl. Prereq: Grad or professional status and written permission of instructor.

**993 Individual Studies in Physical Medicine G 3-5**

Minor investigations using electrodiagnostic techniques; biophysical, physiologic, and therapeutic effects of physical agents, and other medical rehabilitation techniques.

Au, Wi, Sp Qtrs. Prereq: Grad or professional standing and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**999 Research in Physical Medicine and Rehabilitation G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Grad or professional standing and permission of instructor. Repeatable. This course is graded S/U.

## Physical Therapy

School of Allied Medical Professions

306 Atwell Hall, 1583 Perry Street, 292-5921

Programming for Severe Physical Impairments

See Phys Ed 676-Background information and survey of programmatic considerations related to physical, motor, and fitness training of the severely handicapped.

The Parent/Professional Partnership

See ED-S&R 677-Designed to help educators acquire knowledge and skills necessary to assist parents in facilitating the development, education, and socialization of severely handicapped children.



**Reactions and Adjustment to Disability**

See ED-PAES 864-A study of individual reactions to various disabling conditions, the adjustment process, cultural norms and expectations, and responses to the rehabilitation process.

**Consultation in the Human Services Profession**

See ED-PAES 875-The consultation process, models, roles, skills, and outcomes for human services personnel will be addressed; emphasis is placed on extending theoretical and practical knowledge.

**541 Therapeutic Exercise I U 6**

Basic principles and techniques of therapeutic exercise related to physical and medical sciences.

Au Qtr. 4 cl, 2 2-hr labs. Prereq: Permission of instructor.

**542 Therapeutic Exercise II U 6**

Rehabilitation procedures for maximum restoration of the disabled; functional relationships and principles associated with functional exercise and specialized equipment.

Wi Qtr. 4 cl, 2 2-hr labs. Prereq: Permission of instructor.

**543 Therapeutic Exercise III U 5**

Theory and technique of exercise for the neurologically handicapped with carry-over into all areas of disability; integration and correlation of therapeutic exercise approaches.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: Permission of instructor.

**551 Anatomical Clinical Presentations U 2**

Integration of anatomical, neuroanatomical, and kinesiological information obtained in previous courses to review, discuss, and problem solve clinical presentations or case studies.

Wi Qtr. 2 1-hr cl Prereq: Sr standing in division and permission of instructor. This course is graded S/U.

**595 Seminar U 1-3**

Conferences, group discussions, and presentations of selected topics.

Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 or hrs. This course is graded S/U.

**610 Clinical and Professional Practice Issues I U 3**

Clinical and professional practice issues, learning and work styles, leadership, conflict management, and reflective thinking.

Au Qtr. 3 1-hr cl. Prereq: Admission to PhysTher.

**612 Clinical and Professional Practice Issues II U 3**

Clinical issues, practice issues, the legislative process, and funding mechanisms for clinical services.

Wi Qtr. 3 1-hr cl. Prereq: Admission to PhysTher.

**615 Clinical and Professional Practice Issues III U 3**

Clinical issues: terminal clinical assignments, preparation of resumes, and entry into the work setting.

Sp Qtr. 3 1-hr cl. Prereq: Admission to PhysTher.

**620 Integrative Approach to Musculoskeletal Evaluation U G 5**

Musculoskeletal evaluation procedures and techniques, their integration, interpretation, and application as a foundation for program planning in physical theory.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: 495, CBN&Anat 201 or equiv; or permission of instructor.

**630 Neuroscientific Basis of Rehabilitation in Physical Therapy**

Focus on the neuroscientific knowledge that physical therapists need in order to understand the complex problems of the patient with musculoskeletal or neuromuscular disorder.

Su, Wi Qtrs. 4 1-hr cl, 2 2-hr labs. Prereq: Permission of instructor.

**630.01 Lecture G 4**

4 1-hr cl.

**630.02 Laboratory G 2**

2 2-hr labs.

**637 Pediatric Neurologic Physical Therapy U G 3**

Physical therapy management of the child with neurologic dysfunction.

Sp Qtr. 3 cl. Prereq: Sr standing in physther or grad standing in all med and permission of instructor.

**645 Topics in Geriatrics U G 3**

The aging process and its impact on physical and functional abilities and needs of the older adult.

Sp Qtr. 2 cl and 1 1-hr discussion. Prereq: Sr standing in physther or permission of instructor.

**689 Clinical Experience in Physical Therapy**

Supervised provision of physical therapy services in a variety of clinical practice settings.

Minimum 4 weeks; and maximum 8 weeks; 40 hrs/wk. Prereq: Admission to physther and permission of instructor. Minimum of 24 weeks of clinical experience required for completion of program.

**689.01 Clinical Experience I U 2-4**

Su Qtr. Prereq: Completion of 1st professional year in physther curriculum. Not open to students with credit for 515. This course is graded S/U.

**689.02 Clinical Experience II U 2-4**

Su, Au, Wi, Sp Qtrs. Prereq: Completion of 2nd professional year in physther curriculum. Not open to students with credit for 685. This course is graded S/U.

**689.03 Clinical Experience III U 2-4**

Su, Au, Wi, Sp Qtrs. Prereq: Completion of 2nd professional year in physther curriculum. Not open to students with credit for 685. This course is graded S/U.

**689.04 Clinical Experience IV U 2-4**

Su, Au, Wi, Sp Qtrs. Prereq: Completion of 2nd professional year in physther curriculum. Not open to students with credit for 685. This course is graded S/U.

**693 Individual Studies U G 1-15**

Guided study or individual readings, research, or experiences related to physther.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to physther or permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

**720 Advanced Concepts in Evaluation and Treatment of the Spine G 3**

Analysis and application of concepts of manual therapy, motor control, and exercise in managing spinal disorders.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**730 Advanced Concepts in Neuromotor Control G 3**

Critical analysis of neuromotor systems, motor control, and motor dysfunction.

Wi Qtr. 1 2.5-hr cl. Prereq: 630 or equiv or permission of instructor.

**750 Clinical Science I: Upper Quarter G 4**

Designed to establish a knowledge base of concepts, promote understanding and appreciation of principles of biomechanics, normal and pathological movement of spine and upper extremity.

Au Qtr. 5 1-hr cl. Prereq: Permission of instructor.

**751 Clinical Science II: Lower Quarter G 4**

Designed to establish a knowledge base of concepts, promote understanding and appreciation of the principles of biomechanics, normal and pathological movement of lower extremity including gait.

Wi Qtr. 5 1-hr cl. Prereq: Permission of instructor.

**752 Clinical Science III: Special Topics G 3**

Designed to establish a knowledge base of concepts and promote an understanding and appreciation of the principles of disease.

Sp Qtr. 5 1-hr cl for 6 weeks. Prereq: Permission of instructor.

**753 Clinical Science IV: Pediatric G 4**

Designed to develop an understanding of normal development and the result of damage to the developing nervous and musculoskeletal systems.

Su Qtr. 5 1-hr cl. Prereq: Permission of instructor.

**754 Clinical Science V: Adult/Geriatric G 4**

Designed to develop an understanding of the effects of damage to the central nervous system and cardiopulmonary system.

Au Qtr. 5 1-hr cl. Prereq: Permission of instructor.

**755 Clinical Science VI: Adult Neurology G 3**

Designed to develop an understanding of the effects of damage to the central nervous system on sensorimotor function, building on a foundation of anatomy, neuroanatomy, and physiology.

Wi Qtr. 5 1-hr cl for 6 weeks. Prereq: Permission of instructor.

**760 Clinical Applications: Upper Quarter**

Designed to promote analysis and application of the concepts and principles of musculoskeletal evaluation, examination, diagnosis, and treatment of upper extremity and spine.

Au Qtr. Prereq: Permission of instructor.

**760.01 Lecture G 4**

5 1-hr cl.

**760.02 Laboratory G 3**

2 3-hr labs.

**761 Clinical Applications: Lower Quarter**

Designed to promote analysis and application of the concepts and principles of musculoskeletal evaluation, examination, diagnosis, and treatment of the lower quarter.

Wi Qtr. Prereq: Permission of instructor.

**761.01 Lecture G 4**

5 1-hr cl.

**761.02 Laboratory G 3**

2 3-hr labs.

**762 Clinical Applications: Special Topics in Physical Therapy**

Designed to promote an understanding and appreciation for the concepts and principles of evaluation, diagnosis of patients with wounds, burns, pain syndromes, and neoplasms.

Sp Qtr. Prereq: Permission of instructor.

**762.01 Lecture G 3**

5 1-hr cl for 6 weeks.

**762.02 Laboratory G 2**

2 3-hr labs for 6 weeks.

**764 Clinical Applications: Adult/Geriatric**

Designed to promote the understanding of principles of neurologic evaluation, exercise testing, diagnosis, and treatment of the patient with neurological and cardiopulmonary pathologies.

Au Qtr. Prereq: Permission of instructor.

**764.01 Lecture G 4**

5 1-hr cl.

**764.02 Laboratory G 3**

2 3-hr labs.

**765 Clinical Applications: Adult Neurology**

Designed to promote an understanding of the principles of neurologic evaluation, diagnosis, and treatment of the patient with stroke, traumatic brain injury and other neurological disorders.

Wi Qtr. Prereq: Permission of instructor.

**765.01 Lecture G 3**

4 1-hr cl for 6 weeks.

**765.02 Laboratory G 2**

2 3-hr labs for 6 weeks.

**770 Foundations of Physical Therapy Practice G 2**

Introduction to the profession of physical therapy and the behaviors consistent with that profession.

Su Qtr. 2 1-hr cl. Prereq: Permission of instructor.

**771 Decision Making in Physical Therapy Practice G 2**

Introduction to clinical decision making and documentation related to evaluation, goal setting, and treatment of the patient with a musculoskeletal condition.

Au Qtr. 2 1-hr cl. Prereq: Permission of instructor.

**772 Physical Therapy in a Healthcare System G 2**

Introduction to health care delivery systems, critical issues in physical therapy including reimbursement, liability, the role of the PTA and aide, and clinical education.

Wi Qtr. 2 1-hr cl. Prereq: Permission of instructor.

**773 Physical Therapy Management of the Child G 2**

Introduction to health care delivery systems in pediatric practice, critical issues in pediatric physical therapy, the role of family and culture in therapeutic program of child.

Su Qtr. 2 1-hr cl. Prereq: Permission of instructor.

**774 Physical Therapy Management of the Adult G 2**

Introduction to health care delivery systems and critical issues in rehabilitation and geriatrics as well as the resources available for the patient with a disability.

Au Qtr. 2 1-hr cl. Prereq: Permission of instructor.

**775 Physical Therapy Management of the Elderly G 1**

Designed to further introduce the student to health care delivery systems and critical issues in rehabilitation and geriatrics as well as the resources available for the patient with a disability.

Wi Qtr. 2 1-hr cl for 6 weeks. Prereq: Permission of instructor.

**785 Research Seminar**

Designed to provide a forum for the student to explore and analyze the process involved in critical inquiry and clinical research.

1 hr cl. Prereq: Permission of instructor.

**785.01 Introduction to Research G 1**

Au Qtr. This course is graded S/U.

**785.02 Research Methods in Physical Therapy G 1**

Wi Qtr. This course is graded S/U.

**795 Seminar G 1-3**

Discussion of selected topics.

Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**860 Advanced Case Studies in Physical Therapy Practice G 5**

Designed to promote synthesis of the curriculum, and the practice of physical therapy by integrating the content through case studies of patients with complex diagnoses.

Sp Qtr. 2 3-hr cl. Prereq: Permission of instructor.

**870 Advanced Issues in Physical Therapy Practice G 2**

Designed to integrate the previously discussed information on health care delivery systems and critical issues in physical therapy practice.

Sp Qtr. 3 1-hr cl. Prereq: Permission of instructor.

**889 Advanced Clinical Practicum G 2-4**

Advanced clinical experiences in specialized areas of physical therapy practice.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

## Physics

1012 Smith Laboratory, 174 West 18th Avenue, 292-5713

**100 Physics and Humans**

An introduction to the physics of the world of everyday experience through study of selected topics.

Su, Au, Wi, Sp Qtrs. 1 lec; 2 2-hr disc. Not offered at Columbus campus. Not intended for ASC BS students. NS Admis Cond courses.

**100.01 Vibrations and Waves U 5****100.02 Energy U 5****101 Nature of the Physical World U 5**

An elementary description of the physical world emphasizing scientific method and contemporary viewpoints; laboratory work and demonstrations.

Au, Wi Qtrs. 4 cl, 1 2-hr lab. Prereq: Math 075 or 076 or 104 or placement in math course code R. Not offered at Columbus campus. Not intended for ASC BS students. NS Admis Cond course. GEC phys sci course.

**102 Nature of the Physical World U 5**

Continuation of 101.

Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 101. Not intended for ASC BS students. Not offered at Columbus campus. NS Admis Cond course. GEC phys sci course.

**103 The World of Energy I U 5**

An examination of the concept of energy with its personal and global impact using the hands-on discovery mode.

Au, Sp Qtrs. 1 cl, 2 2-hr rec. Not open to students with credit for 100.02. Intended for non-science majors. NS Admis Cond course. GEC phys sci course.

**104 The World of Energy II U 5**

Continuation of 103.

Su, Wi Qtrs. 1 cl, 2 2-hr rec. Prereq: 103. Intended for non-science majors. Not open to students with credit for 100.02. NS Admis Cond course. GEC phys sci course.

**105 Physics by Inquiry: Properties of Matter U 5**

Properties of matter and experimental physics for undergraduates contemplating a teaching career.

Wi Qtr. 2 3-hr cl. Not open to students with credit for 201. Intended for non-science majors, especially those interested in education. NS Admis Cond course. GEC phys sci course.

**107 Physics by Inquiry: Electric Circuits U 5**

Electric phenomena, electric circuits, and experimental physics for undergraduates contemplating a teaching career.

Sp Qtr. 2 3-hr cl. Not open to students with credit for 202. Intended for non-science majors, especially those interested in education. NS Admis Cond course. GEC phys sci course.

**108 Physics by Inquiry: Concepts of Light with Applications to Optics U 5**

Principles of light and optics with applications to real-world phenomena such as astronomy appropriate for undergraduates contemplating a teaching career.

Au Qtr. 2 3-hr cl. NS Admis Cond course. GEC phys sci course.

**109 Preparation for Physics U 4**

Introduction to elementary concepts of mechanics with emphasis on correction of misconceptions and elementary mathematical methods in physics.

Au, Wi Qtrs. 4 cl. Prereq or concur: Math 150 or eligibility for Math 151. Recommended for students with little or no prior physics experience.

**111 General Physics: Mechanics and Heat U 5**

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: Eligibility for Math 150. This course is available for EM credit. NS Admis Cond course. GEC phys sci course.

**112 General Physics: Electricity, Magnetism, and Light U 5**

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 111. This course is available for EM credit. NS Admis Cond course. GEC phys sci course.

**113 General Physics: Modern Physics U 5**

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 112. This course is available for EM credit. NS Admis Cond course. GEC phys sci course.

**131 Introductory Physics: Particles and Motion U 5**

Major concepts of physics from a contemporary point of view; for students in physical sciences, mathematics, or engineering.

Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 1 entrance unit of physics or chem; and Math 151 and concur Math 152, or concur Math 161 or higher. This course is available for EM credit. NS Admis Cond course. GEC phys sci course.

**H131 Honors Physics: Particles and Motion U 5**

Major concepts of physics from a contemporary point of view; challenging, flexible format; includes honors lab; for students strong in physical sciences, mathematics, or engineering.

Au Qtr. 5 cl, 1 2-hr lab. Prereq: 1 entrance unit of physics or chem; and Math 151 and concur Math 152, or concur Math 161 or higher, or written permission of instructor. NS Admis Cond course. GEC phys sci course.

**132 Introductory Physics: Electricity and Magnetism U 5**

Continuation of 131.

Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 131; and Math 152 and concur Math 153, or concur Math 162 or higher. This course is available for EM credit. NS Admis Cond course. GEC phys sci course.

**H132 Honors Physics: Electricity and Magnetism U 5**

Continuation of H131.

Wi Qtr. 5 cl, 1 2-hr lab. Prereq: H131 with grade of C or better; and Math 153 or concur Math 162 or higher, or written permission of instructor. NS Admis Cond course. GEC phys sci course.

**133 Introductory Physics: Thermal Physics, Waves, and Quantum Physics U 5**

Continuation of 132.

Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 132, and Math 153 or Math 162 or higher. This course is available for EM credit. NS Admis Cond course. GEC phys sci course.

**H133 Honors Physics: Thermal Physics, Waves, and Quantum Physics U 5**

Continuation of H132.

Sp Qtr. 5 cl, 1 2-hr lab. Prereq: H132 with grade of C or better, and Math 153 or Math 162 or higher, or written permission of instructor. NS Admis Cond course. GEC phys sci course.

**161 The Building Blocks of Creation I U 5**

An overall perspective on our physical universe from the historical development of fundamental physics concepts to their impact on culture and society.

Au Qtr. 5 cl. Prereq: Math 075 or equiv. GEC phys sci course. NS Admis Cond course.

**162 The Building Blocks of Creation II U 5**

Continuation of 161.

Wi Qtr. 5 cl. Prereq: 161 and Math 075 or equiv. GEC phys sci course. NS Admis Cond course.

**261 Dynamics of Particles and Waves I U 4**

Vectors and kinematics; foundations of Newtonian mechanics; momentum, work, and energy; conservative and nonconservative forces; potentials; angular momentum; rotation about a fixed axis.

Au Qtr. 4 cl. Prereq or concur: 132. Not open to students with credit for 525.

**262 Dynamics of Particles and Waves II U 4**

Rigid body motion; noninertial systems and fictitious forces; central force motion; the special theory of relativity; relativistic kinematics; relativistic momentum and energy.

Wi Qtr. 4 cl. Prereq: 261 and prereq or concur 133; and concur Math 254 or Math 263. Not open to students with credit for 525.

**263 Dynamics of Particles and Waves III U 4**

Introduction to quantum systems; photons; the Bohr atom; matter waves.

Sp Qtr. 4 cl. Prereq: 262, and Math 254 or Math 263.

**294 Group Studies U 1-6**

Designed to permit groups of students the opportunity to pursue special studies not otherwise offered.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**295 Introductory Seminar U 1**

Introduction to departmental research programs and to selected topics of interest in contemporary physics.

Au Qtr. 1 2-hr cl. Prereq: 131. This course is graded S/U.

**367 Uses of Science in Solving Problems of Society U 5**

Energy, environment, and the arms race are examined using the methods of science; focuses on interaction of science and technology; and social and ethical implications of choices.

Au and/or Sp Qtrs at Marion campus, qtrs vary at Columbus campus. 5 cl. Prereq: Math Placement S or higher; 1 5-hr 100-level course in either astron, bio sci, chem, geol sci, or physics; English 110 or 111 or equiv. Not open to students with credit for Phys Sci 180. GEC second writing and phys sci course.

**416 Methods of Experimental Physics U 4**

Introduction to the experimental techniques of physics and the statistical analysis of data, through lectures and a variety of experiments.

Au, Wi, Sp Qtrs. 1 1-hr cl, 2 2-hr labs. Prereq: 131, 132, and 133. GEC data analysis course.

**503 General Meteorology U G 5**

A description of weather phenomena and the physical processes underlying them; intended primarily for nonphysics majors.

Sp Qtr. Prereq: 111 or 131 or permission of instructor.

**516 Intermediate Physics Laboratory U G 4**

Selected intermediate level experiments from basic areas of physics.

Au, Wi, Sp Qtrs. 2 3-hr labs. Prereq: 113 or 133 or permission of instructor. Not open to physics majors or grad students in physics. Repeatable to a maximum of 12 cr hrs.

**517 Introductory Electronics for Physicists U 4**

Intermediate level introduction to electronic circuits, devices, and instrumentation with emphasis on laboratory experience.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl, 2 3-hr labs. Prereq: 133 or permission of instructor. Not open to students with credit for 617, or to grad students in physics.

**525^ Dynamical Models U G 4**

Dynamical models of particle motion; behavior of linear systems; periodic and transient phenomena in mechanical and electrical systems; central force problems; frames of reference.

Sp Qtr. 4 cl. Prereq: 133 and Math 255 or equiv. Not open to students with credit for 262.

**555 Fields and Waves I U G 4**

Introduction to the description of electrostatic fields; dielectrics; boundary-value problems.

Au Qtr. 4 cl. Prereq: 133 and prereq or concur 261, and Math 415 or Math 255, and Math 513 or 551 or 416.

**593 Individual Studies U G 2-5**

Independent reading, study, or laboratory work at an intermediate level.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**594 Group Studies U G 1-6**

Group studies of special topics not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Satisfactory intermediate level courses in physics and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**596 Senior Seminar: Writing and Speaking about Physics and Astronomy U 3**

Seminar on selected topics in physics and astronomy; training in written and oral presentations; third writing course.

Au, Sp Qtrs. 4 cl. Prereq: 262 or equiv, Math 255 or 415, second writing course, and jr or sr standing. Not open to students with credit for 595. GEC third writing course.

**616 Advanced Physics Laboratory U G 4**

Experiments selected from all areas of physics; independent work emphasized.

Au, Wi, Sp Qtrs. 2 3-hr labs. Prereq: 263, 555, and 416 or Stat 245, grad standing or permission of instructor; 631 recommended. Repeatable to a maximum of 24 cr hrs.

**617 Electronics for Physicists U G 5**

An intensive introduction to electronic circuits, devices, and instrumentation with emphasis on laboratory experience.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl, 2 3-hr labs. Prereq: 263 or grad standing.

**621 Statistical Physics I U G 4**

Thermodynamics and statistical mechanics; applications to noninteracting classical and quantum systems.

Au Qtr. 4 cl. Prereq: 263.

**622 Statistical Physics II U G 4**

Interacting systems, special states of matter, critical phenomena and phase transitions.

Wi Qtr. 4 cl. Prereq: 621 or equiv.

**631 Introductory Quantum Mechanics I U G 4**

Introduction to quantum mechanics, including its historical background, the Schrodinger equation, solutions of one-dimensional scattering and bound state problems.

Au Qtr. 4 cl. Prereq: Course in modern physics beyond 133 and Math 255 or 415 and Math 568 or 571.

**632 Introductory Quantum Mechanics II U G 4**

Continuation of 631; the Schrodinger equation in three dimensions, angular momentum, the hydrogen atom, Dirac notation, and time-independent perturbation theory.

Wi Qtr. 4 cl. Prereq: 631.

**633 Introductory Quantum Mechanics III U G 4**

Continuation of 632; time-dependent perturbation theory, scattering theory and the Born approximation, multi-electron atoms, and selected further applications.

Sp Qtr. 4 cl. Prereq: 632.

**656 Fields and Waves II U G 4**

Continuation of 555; magnetic fields of steady currents; induction; Maxwell's equations; plane waves; special relativity.

Wi Qtr. 4 cl. Prereq: 555 or equiv.

**657 Fields and Waves III U G 4**

Continuation of 656; plane waves in matter; physical optics; coherence, interference, diffraction, and dispersion.

Sp Qtr. 4 cl. Prereq: 656 or equiv.

**H659 Sensor Materials: A Multidisciplinary Approach U G 3**

A multidisciplinary approach dealing with sensor materials, synthesis, fabrication, characterization, and modeling; focus on problem solving, group work, communication, and industrial experience.

Sp Qtr. 2 1.3-hr cl, lab hrs arr. Prereq: Sr standing in engineering or physical sciences, or permission of instructor. Not open to students with credit for Chem 694 Sp 2001 or MatSc&En H659. Cross-listed in Materials Science and Engineering.

**664 Theoretical Mechanics U G 4**

Development of Lagrangian mechanics, inertia and stress tensors, rigid body rotations and introduction to the mechanics of continuous media.

Sp Qtr. 4 cl. Prereq: 262 and Math 255, concur Math 513 or 551.

**670 Physics for In-Service Teachers U G 1-15**

Designed to deepen teachers' understanding of basic physical concepts and methods of treatment of selected topics; includes lectures, discussions, demonstrations, and individualized laboratory work.

Su Qtr. Prereq: 15 or hrs in physics, teaching experience, and permission of instructor. Repeatable to a maximum of 30 or hrs. Intended for secondary school science teachers.

**681\* Principles of Stellar Evolution and Nucleosynthesis U G 5**

Physics of stellar structure, evolution, and nucleosynthesis.

Wi Qtr. 5 cl. Prereq: Math 255 or 415; Physics 263; Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for Astron 641 or 651 or 681. Cross-listed in Astronomy.

**682\* Introduction to Cosmology U G 5**

Structure and evolution of the Universe.

Wi Qtr. 5 cl. Prereq: Math 255 or 415; Physics 263; Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for Astron 642 or 682. Cross-listed in Astronomy.

**693 Individual Studies U G 1-15**

Designed to give a properly qualified student opportunity for independent reading, study, or laboratory work in a specialized field of interest.

Su, Au, Wi, Sp Qtrs. Prereq: Satisfactory advanced courses in experimental and theoretical physics and permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

**730 Methods of Theoretical Physics I U G 4**

Sturm-Liouville theory of orthogonal functions; boundary value problems in Cartesian, cylindrical, spherical coordinates; Fourier series, Legendre polynomials, spherical harmonics, and Bessel functions.

Su Qtr. 4 cl. Prereq: Math 601, and 701 or equiv.

**731 Methods of Theoretical Physics II U G 4**

Convergence of infinite series; complex variables, analytic properties and expansions, calculus of residues, gamma function, Hankel functions, modified Bessel functions, other special functions, differential equations.

Wi Qtr. 4 cl. Prereq: Math 601 and 701 or equiv.

**780 Topics in Contemporary Physics**

Experimental and theoretical aspects of areas of current interest in physics.

3 cl. Prereq: 633 or grad standing or permission of instructor.

**780.02 Elementary Particle Physics U G 4**

Sp Qtr.

**780.04 Atomic and Molecular Physics U G 4**

Wi Qtr.

**780.05 Nuclear Physics U G 4**

Wi Qtr.

**780.06 Condensed Matter Physics U G 4**

Sp Qtr.

**780.20\* Special Topics U G 4****H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and cumulative pt-hr ratio commensurate with honors program membership. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

**795 Special Topics Seminar U G 1**

A survey of current research problems in physics.

Au, Wi Qtrs. Prereq: 631 or equiv. Repeatable to a maximum of 3 or hrs. This course is graded S/U.

**801 Seminar in Physics G 1**

Seminars will be conducted by various members of the staff on topics of current interest in their fields of specialization; students will participate in the presentation and discussion of material.

Su, Au, Wi, Sp Qtrs. Prereq: Acceptable specialized courses and permission of instructor. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

**816 Topics in Physics G 3-6**

Laboratory and/or theoretical work on an individual basis on topics of current interest.

Su, Au, Wi, Sp Qtrs. Prereq: 616 or equiv and permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

**821 Classical Dynamics G 4**

Lagrangian dynamics, variational principles, Hamilton's equations, canonical transformations, symmetries and conservation laws, small oscillations, normal coordinates, and classical fields.

Sp Qtr. 4 cl. Prereq: 664 or equiv.

**822 Elasticity and Fluid Mechanics G 4**

Elasticity of solids; stress and strain tensors, dislocations; fluid mechanics; ideal and viscous fluids, chaos, and turbulence.

Au Qtr. 4 cl. Prereq: 821 or permission of instructor.

**827 Quantum Mechanics I G 5**

Postulates and Schrodinger equation, linear vector spaces, one-dimensional problems, path-integral formulation of quantum theory; multiparticle systems, symmetry, orbital angular momentum, and central potentials.

Au Qtr. 4 cl. Prereq: 633 or equiv or permission of instructor.

**828 Quantum Mechanics II G 5**

Spin angular momentum and its dynamics; addition of angular momenta; variational method; time-dependent and time-independent perturbations, semiclassical treatment of electromagnetic radiation.

Wi Qtr. 4 cl. Prereq: 827.

**829 Quantum Mechanics III G 5**

Quantized electromagnetic radiation; scattering theory; density matrix; Dirac equation, relativistic hydrogen atom; Hartree-Fock theory, atoms, and molecules.

Sp Qtr. 4 cl. Prereq: 828.

**830 Quantum Mechanics IV G 4**

Systems with several electrons, exclusion principle; applications to atoms and molecules, and to scattering; Hartree-Fock approximation; Dirac equation for free electrons and for hydrogen.

Au Qtr. 4 cl. Prereq: 829.

**831 Advanced Quantum Mechanics G 4**

Symmetry groups; Lorentz transformations; field quantization; S-matrix theory; general perturbation theory.

Wi Qtr. 4 cl. Prereq: 830.

**834 Electromagnetic Field Theory I G 4**

Boundary value problems involving static electric and magnetic fields, fields in material media.

Au Qtr. 4 cl. Prereq: 656 or equiv.

**835 Electromagnetic Field Theory II G 4**

Maxwell's equations, electromagnetic waves, radiation by simple systems, wave guides.

Wi Qtr. 4 cl. Prereq: 834 or permission of instructor.

**836 Electromagnetic Field Theory III G 4**

Special theory of relativity, dynamics of relativistic particles, collisions between charged particles, energy loss, scattering, radiation by moving charges.

Sp Qtr. 4 cl. Prereq: 835 or permission of instructor.

**846 Statistical Physics I G 4**

Physical thermodynamics and introduction to statistical physics; fundamental postulates, entropy, thermodynamic potentials and changes of phase; microscopic expression for entropy and basis of classical ensemble theory.

Au Qtr. 4 cl. Prereq: 622 and 664 or equiv.

**847 Statistical Physics II G 4**

Canonical and grand ensembles; Quantum statistical mechanics; density matrices, partition functions, Bose and Fermi gases; Debye specific heat; black-body radiation; Bose-Einstein condensation; interacting systems.

Wi Qtr. 4 cl. Prereq: 846 and 828.

**848 Advanced Statistical Physics G 4**

Interacting systems; Ising and Heisenberg models of magnetism, theory of dense gases and liquids, phase transitions and critical phenomena; non-equilibrium statistical physics, Boltzmann equation.

Au Qtr. 4 cl. Prereq: 829 and 847, or permission of instructor.

**880 Advanced Topics**

A systematic advanced treatment of areas of current interest in physics; topics will be announced each quarter.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 828 or permission of instructor.

**880.02 Elementary Particle Physics G 3**

Repeatable to a maximum of 9 cr hrs.

**880.03 Low-Temperature Physics G 3**

Repeatable to a maximum of 9 cr hrs.

**880.05 Nuclear Physics G 3**

Repeatable to a maximum of 9 cr hrs.

**880.06 Condensed Matter Physics G 3**

Repeatable to a maximum of 9 cr hrs.

**880.08 Theory of Quantized Fields G 3**

Repeatable to a maximum of 9 cr hrs.

**880.20 Special Topics G 3**

Repeatable to a maximum of 9 cr hrs.

**999 Research in Physics G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Physiology and Cell Biology

302 Hamilton Hall, 1645 Neil Avenue, 292-5448

**311 Principles of Human Physiology I U 5**

First of a two-quarter sequence covering the following areas of physiology: neuromuscular, heart and circulation, endocrine, brain and special senses, body fluids and kidney, respiration, digestion, temperature control, and metabolism.

Au Qtr. 5 cl. Prereq: 2 qtrs chem, Anatomy 199 or 200 or equiv recommended, or permission of instructor. Not open to students with credit for Physiol 311.

**312 Principles of Human Physiology II U 5**

Continuation of 311.

Wi Qtr. 5 cl. Prereq: 311 or permission of instructor. Not open to students with credit for Physiol 312.

**494 Group Studies in Physiology and Cell Biology U 1-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**601 Organ System Physiology I U P G 5**

First of a two-quarter sequence presenting the following areas of physiology: neuromuscular, heart and circulation, endocrine, brain and special senses, body fluids and kidney, respiration, digestion, temperature control, and metabolism.

Au Qtr. 5 cl. Prereq: Inorganic and organic chem, Physics 111, 112, 113 or equiv, and 1 yr biological sciences, and permission of instructor for undergrads. Not open to students with credit for Physiol 601.

**602 Organ System Physiology II U P G 5**

Continuation of 601.

Wi Qtr. 5 cl. Prereq: 601 or Physiol 601. Normally to be taken directly following 601. Not open to students with credit for Physiol 602.

**604 Advanced Physiology I P 4**

First of a 2-qtr sequence covering these physiological areas: neuromuscular, central nervous system and special senses, endocrinology and reproduction, cardiovascular, digestion, respiration, body fluids, and kidney.

Au Qtr. 4 cl. Prereq: Open only to students enrolled in the Colleges of Dentistry or Pharmacy, or permission of instructor. Not open to students with credit for Physiol 604.

**605 Advanced Physiology II P 4**

Continuation of 604.

Wi Qtr. 4 cl. Prereq: 604 or Physiol 604. Not open to students with credit for Physiol 605. Open only to students enrolled in the Colleges of Dentistry or Pharmacy, or permission of instructor.

**617 Experimental Procedures in Physiology I G 1**

First of a three-quarter sequence of experimental physiology with emphasis on experimental demonstration of physiological principles.

Au Qtr. 1 4-hr lab and 1 cl every other week. Concur: 601. Not open to students with credit for Physiol 617. Open only to grad students in dept or by permission of instructor. Enrollment limited to 10. This course is graded S/U.

**618 Experimental Procedures in Physiology II G 1**

Continuation of 617.

Wi Qtr. 1 4-hr lab and 1 cl every other week. Prereq: 601 and 617, or Physiol 601 and 617; concur: 602. Not open to students with credit for Physiol 618. Open only to grad students in dept or by permission of instructor. Enrollment limited to 10. This course is graded S/U.

**619 Experimental Procedures in Physiology III G 1**

Continuation of 618.

Sp Qtr. 1 4-hr lab and 1 cl every other week. Prereq: 601 and 602 and 617 and 618, or Physiol 601 and 602 and 617 and 618. Not open to students with credit for Physiol 619. Open only to grad students in dept or by permission of instructor. Enrollment limited to 10. This course is graded S/U.

**748\* Electronic Instrumentation for Physiology U P G 2**

Basic principles of electrical and electronic measurement techniques and transducers: bridge circuits, operational amplifiers, filters, strain gauges, force and temperature transducers, digital data recording; familiarization with multimeter and oscilloscope.

Au Qtr. 1 cl, 1 2-hr lab. Prereq: Open only to grad students in dept or by permission of instructor. Not open to students with credit for Physiol 748. Enrollment limited to 15.

**793 Individual Studies in Physiology and Cell Biology U P G 2-18**

Reading, conferences, and laboratory work by individual arrangement with qualified students who desire more intensive and specialized study than is available in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**804 Current Topics in Cell Biology G 5**

Advanced studies in selected areas of cell biology, with a focus on the structural components of the cell and an emphasis on interrelationships of cellular compartments.

Sp Qtr. Arr. Prereq: Permission of instructor and Biochem 511 or 613 series. Not open to students with credit for CBN&Anat 804.

**850 Seminar in Physiology and Cell Biology G 2**

Su, Au, Wi, Sp Qtrs. Repeatable.

**911 Advanced Studies in Physiology and Cell Biology**

Su, Au, Wi, Sp Qtrs. Prereq: 601, 602 or 607, and 608; or Physiol 601, 602 or 607, and 608; or equivalents with written permission of instructor. Quarter schedule of topics to be announced.

**911.15 Gastrointestinal Physiology G 3.5**

Not open to students with credit for Physiol 911.15.

**911.24 Muscle Contraction G 3**

In-depth examination of molecular mechanisms of activation and contraction in muscle.

Not open to students with credit for Physiol 911.24.

**911.26 Advanced Topics in Integrative Neurophysiology G 3**

In-depth presentation of the theory and concepts of neural networks and microcircuits.

2 1.5-hr cl. Not open to students with credit for Physiol 911.26 or Neurosci 911.26. Cross-listed in Neuroscience.

**911.27 Advanced Cardiovascular Physiology G 3**

Advanced presentation of cardiovascular topics, including electrical and mechanical properties of the heart; neural control of the CV system; regulation of vascular smooth muscle, microcirculation.

1 1.5-hr cl. Prereq: 601 and 602, or Physiol 601 or 602; or equiv with permission of instructor. Enrollment limited to 20. Not open to students with credit for Physiol 911.27. Offered every third year.

**999 Research in Physiology and Cell Biology G 1-18**

Research for thesis or dissertation purposes only.

Repeatable. This course is graded S/U.

## Plant Biology

108 Botany and Zoology Building, 1735 Neil Avenue, 292-8952.

**101 Introduction to Plant Biology I: Plants, People, and the Environment U 5**

Plants and their relationships to humans and the biosphere; plant structure and function, growth, and development; practical and economic uses of plants.

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr rec. Not open to students with credit for 112, or Biology 101 or 113. This course is available for EM credit. NS Admis Cond course. GEC bio sci course.

**102 Introduction to Plant Biology II: Plants, People, and the Environment U 5**

Continuation of 101; plant genetics and biotechnology, diversity and evolution, and the importance of plants for the biosphere and for human survival.

Su, Wi, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: 101. This course is available for EM credit. NS Admis Cond course. GEC bio sci course.

**203 Plant Growth Physiology U 4**

Introduction to the growth of the whole plant and of its organs, tissues and cells, emphasizing the role of hormones and environmental factors and tissue culture approaches.

Au Qtr. 3 cl, 1 hr 45 min rec/lab. Prereq: 101, or equiv, or permission of instructor.

**293 Individual Studies U 1-5**

Individual work in the field of the chosen problem.

Su, Au, Wi, Sp Qtrs. Prereq: 102 or 112 or Biology 114, and written permission of instructor. Repeatable to a maximum of 10 cr hrs. Only 5 cr hrs may count towards a plant bio major. This course is graded S/U.

**294 Group Studies U 1-5**

Group study of topics in plant biology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**300 General Plant Biology U 5**

Plant structure and function; growth and development; diversity, reproduction, and evolution of lower and flowering plants; people, the biosphere, and plant diversity.

Au, Wi, Sp Qtrs. 3 cl, 2 2-hr labs. Prereq: Biology 101 or 113. Not open to students with credit for Hort 201 or 300, or H&CS 300. Cross-listed in Horticulture and Crop Science. GEC bio sci course.

**402 Plant Development U 3**

Concepts in plant development at the introductory level; from seed to seedling, seedling to the adult, flowering and fruiting, with emphasis on current research.

Wi Qtr. 3 cl. Prereq: 300 or H&CS 300, or Biology 113 or H115, or permission of instructor. NS Admis Cond course.

**436 Introductory Plant Physiology U 5**

Topics in plant physiology at the introductory level: diffusion, transpiration, water stress, translocation, enzyme kinetics, photosynthesis, plant growth hormones, tropisms, flowering, fruit development.

Au, Sp Qtrs. 4 cl. Prereq: 101 or 112 or Biology 114; 10 cr hrs in chemistry, or equiv with written permission of instructor.

**604 Research Methods in Plant Science**

2.5-hr cl, 2 3-hr labs. Prereq: 300 or 436, or Biology 114 or H&CS 300 or grad standing or permission of instructor. Not open to students with credit for these courses in H&CS or Plant Pth. Cross-listed in Horticulture and Crop Science, and Plant Pathology.

**604.01 Whole Plant U G 4**

Introduction to scientific skills and modern research methods for the study of plants at the whole plant level.

Au Qtr.

**604.02 Cell and Tissue Level U G 4**

Introduction to scientific skills and modern research methods for the study of plants at the cell and tissue level.

Wi Qtr.

**604.03 Molecular Level U G 4**

Introduction to scientific skills and modern research methods for the study of plants at the molecular level.

Sp Qtr.

**622 Plant Molecular Biology U G 4**

An in-depth survey of molecular biology of plants with emphasis on current research projects.

Wi Qtr. 3 cl, 1 2-hr discussion. Prereq: Mol Gen 500 or 501, and Biochem 511; or Mol Gen 605; or permission of instructor. Not open to students with credit for Mol Gen 622 or 632. Cross-listed in Molecular Genetics.

**623 Plant Genetics and Genomics U G 4**

A survey and discussion of genetic systems and analytical tools in higher plants, including current genomic studies and genetic and physical mapping.

Sp Qtr. 3 cl, 1 2-hr recit. Prereq: Mol Gen 500 or 501 and Biochem 511; or Mol Gen 605; or permission of instructor.

**625 Plant Metabolic Engineering U G 3**

Plant metabolic engineering with particular emphasis on the emerging role of plants and cultured plant cells as bioreactors.

Sp Qtr. 2 cl, 1 2-hr recit. Prereq: 622 or Mol Gen 622, or 735, or 736, or Biochem 613; or permission of instructor.

**630 Plant Physiology U G 3**

Advanced study of plant physiology; solutions, diffusion, osmotic quantities, transpiration, absorption and translocation of water, protein metabolism, enzymes, and respiration.

Au Qtr. 3 cl. Prereq: 101 or 112 or Biology 114, Chem 242 or 252 or Biochem 511, or written permission of instructor.

**631 Plant Physiology U G 3**

Advanced study of plant physiology; pigments, photosynthesis, carbohydrate and fat metabolism, absorption of mineral salts, translocation of solutes, regulation of plant growth, and development.

Wi Qtr. 3 cl. Prereq: 101 or 112 or Biology 114, Chem 252 or Biochem 511, or written permission of instructor.

**643\* Plant Anatomy U G 5**

The structure, function, and development of cells, tissues, and organs of vascular plants.

Wi Qtr. 2 cl, 3 2-hr labs. Prereq: 101 or 112 or Biology 114, and 10 cr hrs in biological sciences; or permission of instructor.

**648\* Plant Cell Biology U G 4**

The structure and function of plant cells and their components in the context of eukaryotic cell biology.

Wi Qtr. 3 cl, 1 recit. Prereq: Some background in plant bio and/or cell biology. Students are encouraged to consult with instructor before enrolling.

**693 Individual Studies U G 1-5**

Problems may be selected in the fields of paleobotany, taxonomy, morphology, morphogenesis, anatomy, phycology, physiology, ecology, genetics, or cytology.

Su, Au, Wi, Sp Qtrs. Prereq: 102 or 112 or Biology 114, and 15 additional cr hrs in biological sciences. Not more than 5 cr hrs may be counted toward an undergrad major in plant bio. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Group study of special topics in plant biology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**735 Plant Biochemistry I U G 3**

The biochemistry of plant chloroplasts and mitochondria: photosynthesis, carbohydrate metabolism, sulfate and nitrate reduction, chlorophyll and heme synthesis, chloroplast development, respiration, and mitochondrial development.

Au Qtr. 3 cl. Prereq: Biochem 511 or 614. Not open to students with credit for 631 prior to Wi Qtr 1988, or to students with credit for 635 prior to Wi Qtr 1995, or to students with credit for Biochem 735. Cross-listed in Biochemistry.

**736 Plant Biochemistry II U G 3**

The biochemistry of plants with emphasis on the synthesis and structure of cell walls, lipids, secondary compounds, phytohormones and nitrogen fixation.

Wi Qtr. 3 cl. Prereq: 735 or Biochem 735. Not open to students with credit for 631 prior to Wi Qtr 1988, or to students with credit for 635 prior to Wi Qtr 1995, or to students with credit for Biochem 736. Cross-listed in Biochemistry.

**741\* Reproductive Biology of Flowering Plants U G 3**

An advanced course on reproductive processes in flowering plants with emphasis on recent biochemical, molecular, and genetic approaches.

Wi Qtr. 3 cl. Prereq: 101 or 300 or H&CS 300 or Biology 114; and 15 additional cr hrs in biological sciences; or permission of instructor. Not open to students with credit for 641.

**H783 Honors Research U 3-5**

Problems may be selected in the fields of cell biology, morphology, morphogenesis, anatomy, physiology, or biochemistry and molecular biology. Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing, a grade of A in at least half of the plant bio courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. Failure to receive a mark of S in this course is a disqualification for graduation with distinction. This course is graded S/U.

**795 Special Topics in Plant Biology U G 1-3**

Lecture/discussion in a seminar format of publications, current research, or research techniques in plant biology.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 25 cr hrs in biological sciences at 200 level or above. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**796 Current Topics in Signal Transduction G 3**

A discussion of signal transduction mechanisms revealed in plant systems. Sp Qtr. 2 1.5-hr cl. Prereq: Biochem 511 and Mol Gen 500, or equivs; or permission of instructor.

**800 Plant Biology Colloquium G 1**

Attendance at weekly seminars presented by outside speakers, faculty, and post-doctoral researchers.

Au, Wi, Sp Qtrs. 1 cl. Repeatable. Presentations will be on cutting edge research in cellular, developmental, and molecular biology of plant biotechnology. This course is graded S/U.

**803 Seminar in Developmental and Regulatory Plant Biology G 1-3**

Discussion of advanced topics in developmental and regulatory plant biology.

Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**833\* Advanced Plant Physiology: Growth G 3**

The physiology of growth; special attention given to the interrelated effects of plant hormones and environmental factors on the growth process in plants.

Sp Qtr. 3 cl. Prereq: Biochem 511, and 10 additional cr hrs in biological sciences; or permission of instructor.

**835\* Advanced Plant Physiology: Plant Reproduction and Development G 3**

Physiology of flowering, fruit and seed development, vegetative reproduction, dormancy, apical dominance, abscission, and senescence.

Sp Qtr. 3 cl. Prereq: 631 or equiv and Biochem 511.

**836 Mechanisms of Plant Development G 3**

Discussion of current research topics on the mechanisms of plant development, including such topics as genetic control and the role of biochemical and environmental signals.

Sp Qtr. 2 1.5-hr cl. Prereq: 436 or 622 or 631 and Mol Gen 500 or 622; or permission of instructor.

**890 Interdepartmental Seminar in Molecular, Cellular and Developmental Biology G 2**

Students will present oral reports and lead discussion on research progress in specific areas of molecular, cellular, and developmental biology.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Microbiology, Molecular Genetics, and Plant Biology. This course is graded S/U.

**892 Interdepartmental Seminar in Plant Physiology G 1**

Students will present seminars on their research or related topics in plant physiology and/or attend seminars by local and visiting researchers.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Including cr hrs earned in Agronomy/Biochem/Fd Sc&Nu/Fd Sc&Te/H&CS/Hort 892. Cross-listed in Biochemistry, Food Science and Technology, and Horticulture and Crop Science. This course is graded S/U.

**998 Research in Plant Biology: Thesis G 1-18**

Research for master's thesis only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research in Plant Biology G 1-16**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Plant Pathology

201 Kottman Hall, 2021 Coffey Road, 292-1375

**201 Social Impact of Plant Diseases in Shaping Human Society U 2**

Review of the interactions of plant pathogens and the social, economic, and historic consequences for civilization.

Sp Qtr. 1 2-hr cl.

**294 Group Studies U 1-5**

Special group studies of a selected area in plant pathology not provided in other courses.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 10 cr hrs.

**300 Field and Woodland Fungi U 3**

An introduction to common macrofungi in natural habitats with emphasis on identification and ecology.

Au Qtr. 2 3-hr lec/lab. Prereq: Biology 101 or 113 or Plant Bio 101.

**401 General Plant Pathology U 5**

An introduction to diseases of plants.

Au Qtr. 3 cl, 2 2-hr lab. Prereq: Biology 101 or 113, Biology 114 recommended.

**489 Internship Experiences in Plant Health Management U 1-5**

Ten or more weeks of an individualized experiential learning opportunity designed to link theoretical classroom knowledge with practical field application.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 401. Open to plant health management majors and plant pathology minors. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**501 Diseases of Ornamentals U G 3**

Biology and integrated control of important diseases of ornamental plants.

Sp Qtr. 2 2-hr cl. Not open to students with credit for 610.

**510 Diseases of Forest and Shade Trees U G 3**

Major types of forest and shade tree diseases with emphasis on diagnosis, etiology, epidemiology, and control.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: Biology 101 or 113 or Plant Bio 101 (Biology 114 recommended); or permission of instructor.

**530\* Plant Responses to Environmental and Biotic Stresses U G 3**

A modern treatment of the physiological reactions of plants to stressful conditions including drought, salinity, temperature extremes, toxicities and infections by bacteria, fungi and viruses.

Sp Qtr. 3 cl. Prereq: Sr or grad standing and one course in plant or animal biology.

**597 Societal Issues: Pesticides, Alternatives, and the Environment U 5**

Consideration of the political, ethical, and economic issues related to pesticide usage, atmospheric pollution, and release of genetically engineered organisms.

Au, Wi, Sp Qtrs. 2 2.5-hr cl. Prereq: Sr standing. GEC/LAR course.

**600 Introduction to Bacterial and Viral Pathogens of Plants U G 5**

Introduction to bacterial and viral pathogens and the diseases they cause in plants.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 401 or Microbiol 521 or permission of instructor.

**602 Plant-Microbe Interactions U G 3**

An introduction to pathogenesis, disease resistance and biological control at the cellular, molecular and biochemical level.

Wi Qtr. 2 2-hr cl. Prereq: 401, Biochem 511 or Microbiol 509 or permission of instructor.



**603 Plant Disease Management U G 5**

Theory and practice of plant disease management; emphasis on integration of cultural, biological, chemical, and plant breeding techniques.

Sp Qtr. 3 2-hr cl. Prereq: 401; and sr standing in agronomy, hort, plant hlt mgt, or entomol; or permission of instructor. GEC course.

**604 Research Methods in Plant Science**

2.5-hr cl, 2 3-hr labs. Prereq: H&CS 300 or Biology 114 or Plant Bio 300 or 436 or grad standing or permission of instructor. Not open to students with credit for these courses in H&CS or Plant Bio. Cross-listed in Horticulture and Crop Science, Plant Biology.

**604.01 Whole Plant U G 4**

Introduction to scientific skills and modern research methods for the study of plants at the whole plant level.

Au Qtr.

**604.02 Cell and Tissue Level U G 4**

Introduction to scientific skills and modern research methods for the study of plants at the cell and tissue level.

Wi Qtr.

**604.03 Molecular Level U G 4**

Introduction to scientific skills and modern research methods for the study of plants at the molecular level.

Sp Qtr.

**612 Turfgrass Diseases U G 3**

A detailed study of the diseases of turfgrass, factors influencing disease severity, specific measures for disease control.

Wi Qtr. 2 2-hr cl. Prereq: 401.

**613 Integrated Turf Health and Pest Management U G 4**

Identifying the most appropriate genetic, cultural, biological, and chemical programs for reducing pest damage.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: H&CS 422, 470, Entomol 462 or 460.01 and Plant Pth 612. Not open to students with credit for Agronomy 613.

**615 Fruit and Vegetable Crop Diseases U G 3**

Major diseases of fruit and vegetable crops with emphasis on etiology, epidemiology and management.

Wi Qtr. 2 2-hr cl. Prereq: 401 or equiv. Not open to students with credit for 615.01.

**636\* Plant Nematology U G 3**

Bionomics and control of plant-parasitic nematodes.

Wi Qtr. 3 cl. Prereq: 401.

**660 Mycology U G 5**

An introduction to the study of fungi.

Wi Qtr. 2 2-hr lec/lab, 2 hrs lab work arr. Prereq: 300 or 401 or 601 or Biology 114 or permission of instructor. Not open to students with credit for Botany 660.

**H693 Honors Projects U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs. Hours repeatable as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**685 Field Plant Pathology U G 2**

Study of plant diseases in the field with emphasis on diagnosis and epidemiology; supplementary laboratory work.

Su Qtr. 1 4-hr cl arr. Prereq: 401 or 615, and permission of instructor.

**693 Individual Studies U G 1-5**

Problems may be selected in the various areas of plant pathology.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-3,5**

Special group studies of a selected area in plant pathology not provided in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: Sr or grad standing. Repeatable to a maximum of 10 cr hrs.

**702\* Plant Disease Epidemiology U G 4**

Study of the dynamics of plant diseases; statistical modeling of plant disease epidemics.

Sp Qtr. 2 2-hr cl. Prereq: 401, Stat 528, or permission of instructor.

**703 Agricultural Genomics: Principles and Applications U G 3**

Introduction to new developments in genomics and application in agriculture.

Sp Qtr. 2 1.5-hr cl. Prereq: Mol Gen 500 or Biochem 613 or permission of instructor. New developments in agricultural genomics.

**704 Advanced Topics in Fungal Biology U G 4**

Advanced treatment of the nature, genetics, physiology, ecology, and importance of fungi in terrestrial ecosystems with an emphasis on plant pathogens.

Sp Qtr. 3 1-hr lec, 1 3-hr lab. Prereq: Plant Pth 660 or equiv, or permission of instructor.

**832\*\* Plant-Bacteria Interactions G 5**

Bacterial pathogens and symbionts affecting plant health and productivity; molecular, cellular, and environmental determinants of plant-microbe interactions and successful biological control.

Sp Qtr. 3 2-hr cl. Prereq: 600 or Microbiol 520, Mol Gen 501 or Microbiol 581, and Biochem 511; or permission of instructor. Not open to students with credit for Horticulture & Crop Science 832. Cross-listed in Horticulture & Crop Science.

**838\*\* Plant Virology G 3**

Plant virus detection, identification, structure, purification, serology, replication, transmission, vector relationships, variability, nomenclature and classification, and virus disease symptoms, physiological effects, epidemiology, economic importance, and control.

Sp Qtr. 3 1-hr cl. Prereq: 600 or equiv, or permission of instructor.

**839\*\* Plant Virology Laboratory G 2**

Experimental approach to plant virus detection and identification; structure, purification serology, replication, transmission, vector relationships, variability, nomenclature and classification, virus disease symptoms, physiological effects, and epidemiology.

Sp Qtr. 2 2-hr cl. Prereq or concur: 838, or permission of instructor.

**842\* Biochemistry of Plant Responses to Infection G 3**

Introduction to the molecular and genetic basis of plant responses to microbial infection and symbiosis.

Wi Qtr. 2 2-hr cl. Prereq: Biochem 511 and 521 or equivs, one 600-level course in plant physiology or plant biochemistry, or written permission of instructor. Biochem 631 or Plant Bio 630 or 631 recommended.

**995 Seminar G 1**

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

**999 Research G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Polish

232 Cunz Hall, 1841 Millikin Road, 292-6733

See also Slavic Languages and Literatures.

**101 Elementary Polish I**

Introduction to Polish; development of listening, reading, speaking, and writing skills.

Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Students must register for and complete 5 cr hrs during the qtr.

**102 Elementary Polish II**

Continued study of Polish; development of listening, reading, speaking, and writing skills.

Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Students must register for and complete 5 cr hrs during the qtr.

**111 Intensive Intermediate Polish U 5,10**

An intensive course that combines the content of 103 and 104; balanced use of the four basic skills: reading, oral comprehension, speaking, and writing.

Sp Qtr. 5 2-hr cl. Prereq: 102. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 may not register for more than 5 cr hrs, but must complete the entire course. Course intended for students who wish to expedite the completion of the language requirement. GEC for lang course.

**407 Polish Conversation and Composition**

Reading from modern Polish literature, practice in writing and speaking.  
Not open to native speakers of this language through regular course enrollment or EM credit.

**407.01 Classroom Track U 5**

Prereq: Permission of instructor.

**409 Advanced Polish Conversation and Composition U 5**

Review of Polish grammar, written compositions, perfection of pronunciation, translation practice, and expansion of vocabulary.

Prereq: 407.01. Not open to native speakers of this language through regular course enrollment or EM credit.

**630 Polish Literature to 1900 U G 5**

Survey of Polish literature from its beginnings to 1900.

Prereq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English, but students majoring in Slavic will do portions of the readings in the original.

**631 Polish Literature 1900 to Present U G 5**

Survey of Polish literature from 1900 to present.

Prereq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English, but students majoring in Slavic will do portions of the readings in the original.

## Political Science

2140 Derby Hall, 154 North Oval Mall, 292-2880

**General Prerequisites for Courses Numbered 600**

Unless otherwise indicated, the prerequisites for 600-level courses are two courses in political science, or the consent of the instructor.

Enrollment in 700-level courses is limited to graduate students or others with written permission of the instructor only.

**General Prerequisites for Courses Numbered 800 and 900**

A general foundation in undergraduate courses in history and the social sciences is assumed. Any of the 800-level courses listed may be repeated provided that no student shall earn more than 10 hours of credit in any single course.

**100 Introduction to Comparative Politics U 5**

Introduction to major types of political systems found in the world today; examination of similarities and differences among Western democratic, communist, and Third World political systems.

Au, Wi, Sp Qtrs. H100 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC soc sci organizations and politics course.

**101 Introduction to American Politics U 5**

Introduction to American politics, the institutions and processes which create public policy, the strengths and weaknesses of the American political systems.

Su, Au, Wi, Sp Qtrs. 5 cl. H101 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 300. GEC soc sci organizations and politics course. SS Admis Cond course.

**145 The Politics of Global Problems U 5**

The politics of scarcity and security; concepts including power, national interest, cooperation, and expansion applied to global relations in energy, food, technology, and war.

Su, Au, Wi, Sp Qtrs. H145 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 105. GEC soc sci human, natural, and economic resources course.

**165 Introduction to Politics U 5**

Introduction to politics: political issues, political power, democracy, authoritarianism and totalitarianism, basic political institutions, political ideas, and global politics.

Su, Au, Wi, Sp Qtrs. 5 cl. H165 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC soc sci organizations and politics course. SS Admis Cond course.

**201 Introduction to Political Behavior U 5**

Focus on concepts such as attitude, role, and group and their application in such areas as voting behavior and political participation.

5 cl. H201 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC soc sci individuals and

groups course. SS Admis Cond course.

**202 Politics in Contemporary Societies U 5**

The politics of contemporary nations, including such topics as political change, party systems, issues in post-industrial societies, political violence, conflict resolution, and policy making.

5 cl. SS Admis Cond course.

**210 Modern Political Ideologies U 5**

Introductory survey of modern political ideologies: capitalism, socialism, communism, anarchism, fascism; consideration of both the justifications of ideologies and their implications for political life.

5 cl. H210 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC soc sci organizations and politics course. SS Admis Cond course.

**245 The United States in World Politics U 5**

The role of the United States in world politics since the Second World War, emphasizing structural change in economic and political-military relations.

Su, Au, Wi, Sp Qtrs. Not open to students with credit for 215. GEC soc sci organizations and politics course. SS Admis Cond course.

**294 Group Studies U 1-5**

Su, Au, Wi, Sp Qtrs. 5 cl. Repeatable to a maximum of 10 cr hrs.

**300 American Politics and Policy Making U 5**

An examination of American political institutions and the policy-making process.

5 cl. Not open to students with credit for 101.

**305 Introduction to Public Policy U 5**

Introduction to the workings of policy-making processes within governments, and the use of social science reasoning to evaluate and improve the content of policies.

5 cl.

**345 Interpreting International Politics U 5**

An examination of the nature and determinants of major phenomena in international politics such as crises, alliances, integration, interdependence, subversion, war and conflict resolution processes.

5 cl.

**367 Second Writing Course**

GEC second writing course.

**367.01 Contemporary Issues in American Politics U 5**

Discussion of and critical writing about controversies in contemporary American politics; aimed at fostering analytical abilities in reading comprehension, oral, and written expression.

Au Qtr. 2 2-hr cl or 5 cl. H367.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 101 or 300 or permission of instructor, English 110 or 111, and soph standing.

**501 The American Presidency U G 5**

An examination of the American presidency, emphasizing the contemporary role of the president, the institutionalized presidency, and theories of presidential behavior.

5 cl.

**502 Campaign Politics U G 5**

The organization and strategy of American political campaigns; practical politics seen in the light of knowledge about political behavior and public opinion.

5 cl.

**504 Black Politics U 5**

Economic, political, and social constraints on the development of black political power; the efforts made by black people in recent times to organize for effective political action.

5 cl. Not open to students with credit for AfAm&ASt 504. Cross-listed in African-American and African Studies.

**505 Urban Government U G 5**

Introduction to the governance of urban communities in the United States.

5 cl.

**506^ Ohio Politics U G 5**

Examination of state politics with special reference to Ohio.

5 cl.

**507 American State Politics U G 5**

Comparative analysis of politics in the American states.

5 cl. Prereq: 101 or 300 or permission of instructor. Not open to students with credit for 604.

**510 Bureaucracy and Public Policy U G 5**

An examination of bureaucracies as political institutions, and a consideration of their role in several areas of public policy implementation.

2 2-hr cl. Not open to students with credit for 610.

**512\* Women and Politics U G 5**

An examination of women's participation in political activity, including changes over time in women's political roles and comparison with the roles of men.

5 cl.

**514 Women and the Law U G 5**

An examination of the legal status of women and the ways in which law affects the situation of women in American society.

5 cl.

**515 The Politics of Legal Decision Making U G 5**

An examination of the literature relating social-science theories and research to the law, focusing on the criminal justice system.

Sp Qtr. 2 2-hr cl.

**516 Judicial Politics U G 5**

Analysis of the roles of judges and lawyers as participants in the American political process; analysis of courts as political institutions.

5 cl.

**517 Legislative Politics U G 5**

Analysis of legislatures and legislators, with a focus on the U.S. Congress and some attention to state legislatures and representative assemblies in other countries.

Au, Wi Qtrs. 5 cl. Prereq: 101 or 300 or permission of instructor. Not open to students with credit for 617.

**519 Civil Liberties in the Courts U G 5**

An examination of civil liberties decisions by American courts, their legal and political bases, and their effects on government and society.

5 cl.

**520 The American Constitution and Governmental Powers U G 5**

Assessment of the contemporary realities of U.S. governmental authority as interpreted by the judiciary; emphasis on judicial review, case and controversy requirements, and legislative and executive power.

5 cl. Not open to students with credit for 694 Sp Qtr 1979 or Sp Qtr 1980.

**H521 Supreme Court Decision Making U 5**

Study of explanations for Supreme Court decisions; use of those explanations and independent research to predict justices' positions in current cases.

Au Qtr. 2 2-hr cl.

**530 Politics of Post-Communist Societies in Eastern Europe U G 5**

Systematic comparison of the sources, dynamics, and outcomes of political, economic, and social transformations in the former Communist countries of Eastern Europe.

5 cl.

**533 Soviet and Post-Soviet Politics U G 5**

Survey of the politics of the successor states of the USSR with the emphasis on democratization, economic reform, institutional development, elites, mass behavior and ideology.

3 11/3-hr cl. Not open to students with credit for 630.

**535 Government and Politics of the Industrialized World U G 5**

Analyses of politics of the United States, Western Europe, and Japan regarding contemporary problems of inequality, regime instability and conflict, value change and the environment.

5 cl.

**537 Government and Politics of China U G 5**

A study of the contemporary political process of Communist China; considerable time will be spent on an analysis of recent political change in China and the process of revolution.

5 cl. Not open to students with credit for 637.

**538 Democracy and China U G 5**

Chinese democracy in theory and practice, with attention to recent developments in the Peoples' Republic and Taiwan.

Sp Qtr. 2 2-hr cl.

**540\* Latin American Government and Politics U G 5**

A study of political processes, institutions, and groups in Latin America, with emphasis on constitutional, geographical, social, and economic environments in which they operate.

5 cl. Not open to students with credit for 640.

**541 Politics of the Developing World U G 5**

A general introduction to the theoretical and substantive literature dealing with the historical development and contemporary characteristics of the new states of Asia and Africa.

5 cl.

**545 Foreign Policy Decision Making U G 5**

Examination of how political leaders make decisions, emphasizing such issues as leaders' reasoning processes and the impact of public opinion and foreign policy bureaucracies.

Au Qtr. 2 2-hr cl. Prereq: 245 or permission of instructor.

**546 Politics in the Middle East U G 5**

Politics of Arab-Israeli relations, Persian Gulf, Islamic fundamentalism, and oil; processes of change and their effects on governments and international relations.

Wi Qtr. 2 2-hr cl.

**550 Theories of International Relations U G 5**

Various theories of world politics, such as: realism, liberalism, long cycles, domestic and bureaucratic politics, and decision-making level theory.

Sp Qtr. 2 2-hr cl.

**551 The United Nations System in Global Problem Solving U G 5**

Activities and potential of the United Nations system in promoting economic well-being, environmental management, resource sharing, social justice, and control of violence.

5 cl.

**553 Political Analysis of International Economic Relations U G 5**

Examines the relationship between political and economic events in the international system; topics include global interdependence, inequality, scarce resources, periphery nation strategies.

5 cl. Not open to students with credit for 653 or 753.

**555\* Soviet and Post-Soviet Foreign Policy U G 5**

Basic concepts about, and choices in Soviet and post-Soviet foreign policy; development and presentation of patterns of relations with key nations; major problems in future relationships.

2 2-hr cl. Not open to students with credit for 655.

**560 Regional Patterns in International Politics U G 5**

Examination of ideological, institutional, and foreign political patterns in particularized regions, such as sub-Sahara Africa, Arab Middle East, Southeast Asia.

5 cl. Repeatable to a maximum of 15 cr hrs.

**H565 Power and Resistance U 5**

Politics and the perspectives of the powerless; state terror, apartheid, police interrogation, mob violence, conquest, attempted genocide, etc.

Sp Qtr. 2 2-hr cl. Prereq: Rank 3 or higher; enrollment in an honors program, or permission of instructor.

**571 Political Theories of Democracy U G 5**

An examination of theories of democracy, focusing on normative and descriptive dilemmas such as participation versus liberty in democratic societies.

5 cl.

**573 American Political Ideas U G 5**

An analysis of American ideas on law and government, authority and liberty, oligarchy and democracy.

5 cl.

**574 Political Participation and Voting Behavior U G 5**

A study of political participation and its correlates, determinants of the vote decision, and analysis of recent American elections.

5 cl. Not open to students with credit for 674.

**575 American Political Parties U G 5**

Theories of political parties, party organization, individual voting behavior, nomination and electoral politics, the party in government.

5 cl. Not open to students with credit for 675.

**580 State and Economy U G 5**

Introduction to comparative political economy; relations between the state and the economy, politics and markets, and democracy and capitalism; the consequences of state intervention.

Wi Qtr. 2 2-hr cl.

**585 Techniques of Political Analysis U 5**

Introduction to research design, nature of data, its generation and analysis; analysis of political variables.

5 cl. H585 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 585: One course in polit sc at the 300 level or above. Prereq for H585: One course in polit sc at the 300 level or above, and Math 150. GEC data analysis course.

**589 Student Internship in Politics and Public Policy U G 1-15**

Combines experience in political institutions or policy processes with analysis of that experience in light of relevant scholarly literature.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**590 Topics in Political Science U G 3-5**

Selected issues and topics in American, international, or comparative politics, political theory or public policy; topics vary by section and instructor.

Repeatable to a maximum of 10 cr hrs.

**593 Individual Studies U G 1-15**

Students will devote their time to special projects including papers, exams, and practical political experience.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**H596 Honors Seminar in Political Science U 3-5**

Intensive study of selected political science topics and issues in seminar format; topics vary.

Prereq: Enrollment in an honors program or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**597 Issues of the Contemporary World**

Prereq: Sr standing. GEC contemporary world courses.

**597.01 Interdependence and Nationalism in World Politics U 5**

An examination of the relationships industrialized countries have with each other and nations in the Third World; focus on the potential for cooperation and conflict.

Sp Qtr. 3 11/3-hr cl or 2 2-hr cl or 5 cl. H597.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 350.

**597.02 Political Problems of the Contemporary World U 5**

Critical political problems of industrialized and Third World societies, including governmental legitimacy, conflict and violence, social welfare, equality, and economic development.

Au, Wi, Sp Qtrs. 5 cl. H597.02 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 325.

**H597.03 Interdisciplinary Perspectives on Current Issues U 5**

Team-taught interdisciplinary and cross-cultural course on the relations among politics, ethics, rhetoric, and law as they confront current practical issues.

Sp Qtr. 2 2-hr cl. Not open to students with credit for English H597.03 or Philos H597.03. Cross-listed in English and Philosophy.

**603 Public Opinion U G 5**

Origins and nature of political attitudes; the content of public opinion; the public's influence on policy-making.

Wi Qtr. 5 cl.

**605<sup>A</sup> Survey Research in Political Science U G 5**

The conducting of public opinion polls; participation in a public opinion survey.

2 2-hr cl.

**608<sup>\*</sup> Ethnic Politics in the American Cities U G 5**

Group conflict along ethnic lines in major American cities: factors contributing to group cohesion in politics; strategies and resources for exercising power through collective political action.

5 cl.

**609 The Mass Media and American Politics U G 5**

An overview of the influence of the mass media on contemporary American politics; primary focus on news media with consideration of entertainment programming.

Au Qtr. 2 2-hr cl.

**612 Political Leadership U G 5**

Establishment of a working definition of political leadership, investigation of recruitment of leaders, analysis of major functions political leaders perform, and assessment of consequences of political leadership.

Sp Qtr. 2 2-hr cl. Prereq: 100 or 101 or 300 or permission of instructor. Not open to students with credit for 510.

**614 Urban Politics U G 5**

The study of political problems facing the cities: including community power, poverty, welfare, urban renewal, urban education, law enforcement, and violence.

5 cl.

**627 Government and Politics of Western Europe U G 5**

Systematic comparison of political phenomena and governmental institutions within West European societies.

5 cl. Prereq: Permission of instructor for second 5 cr hrs. Repeatable to a maximum of 10 cr hrs.

**628 Political Integration in Western Europe U G 5**

A study of the European Union including pooled sovereignty models of international cooperation, and political integration.

Wi Qtr. 2 2-hr cl.

**629<sup>A</sup> Analysis of 20th-Century Problems in Cross-National Perspective U G 5**

Studies of contemporary political phenomena from a comparative perspective, including instability-stability in parliamentary systems, revolution, urban and local politics, national integration, and other topics.

Repeatable to a maximum of 15 cr hrs.

**635<sup>A</sup> Government and Politics of Japan U G 5**

The government and politics of Japan, with special emphasis being given to the impact of cultural and social patterns on the processes of government with imported political institutions.

5 cl.

**636 Southeast Asia U G 5**

Governments and politics of the Philippines, Indonesia, Indo-China, Malaysia, Thailand, and Burma; contemporary problems of this region in relation to world politics.

5 cl.

**653 Politics of the Modern World Economy U G 5**

Institutions and processes which define the contemporary global economy; their political origins and consequences as interpreted by competing schools of thought in political economy.

Wi Qtr. 5 cl. Not open to students with credit for 753. Not recommended to students with credit for 553.

**670 Political Theory: Socrates to Machiavelli U G 5**

The study of major works by political theorists, including Plato, Aristotle, Cicero, Augustine, Aquinas, Machiavelli, and others, in ancient and medieval times.

5 cl.

**671 Political Theory: Machiavelli to Hume U G 5**

The study of major works by political theorists, including Machiavelli, Hobbes, Locke, Rousseau, Hume, and others, from the Renaissance into the 18th century.

5 cl.

**672 Political Theory: Hume to Marx U G 5**

The study of major works by political theorists, including Hume, Bentham, Kant, Hegel, Mill, Marx, and others, before and after the French Revolution.

5 cl.

**673 Political Theory: 20th Century U G 5**

The study of major works by political theorists in the 20th century.

Su Qtr. 5 cl.

**678 Political Decision-Making and Public Policy U G 5**

Comparative analysis of decision-making processes of contemporary nations considering the welfare, education, economic, and environmental policy arenas.

3 cl, 1 lab. Not open to students with credit for 578.

**679 Policy Analysis U G 5**

An analysis of the policy process emphasizing the determinants of public policy, theories of public choice, and the implementation, impact, and evaluation of policy decisions.

5 cl.

**680 Models of Politics U G 5**

An introduction of major approaches used in modelling politics, including social choice, game theory, and probability models.

Au Qtr. 5 cl.

**684 Introduction to Political Science Research Methods U G 5**

Introduction to political science research with emphasis on survey and experimental designs, data generation techniques, data processing, and computer utilization.

2 2-hr cl. Prereq: Grad standing in polit sc or permission of instructor.

**685 Methods of Quantitative Analysis: Elementary U G 5**

Explication, interpretation, and application of techniques for quantitative analysis of political data; descriptive and inferential statistics, with emphasis on bivariate analysis.

5 cl. Prereq: Grad standing in polit sc or permission of instructor.

**686 Methods of Quantitative Analysis: Intermediate U G 5**

Descriptive and inferential statistics with emphasis on multivariate analysis; additional topics offered as desired and possible: scaling, index construction, sampling, measurement reliability.

5 cl. Prereq: 685 and grad standing in polit sc, or permission of instructor.

**694 Contemporary Political Problems U G 3-5**

Prereq: Sr standing and 15 cr hrs in polit sc. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700^ Basic Theories in the Study of American Politics U G 5**

Examination of basic concepts and approaches; consideration of methodological and substantive problems encountered at various levels of analysis.

2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**701 Seminar on the American Presidency U G 5**

Examination of presidential research and analysis of literature on selected aspects of the presidency.

2 2-hr cl. Prereq: 501 or grad standing or permission of instructor. Not open to students with credit for 601.

**703^ Readings in Public Opinion U G 5**

Intensive analysis of literature on selected topics in public opinion.

2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**704 Readings in State and Local Politics U G 5**

Intensive review of selected aspects of the literature on state and local politics in the United States.

2 2-hr cl. Prereq: 604 or 614 or equiv; and grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**707 Race and Ethnicity in American Politics**

An examination of the role of race and ethnicity in American politics, including public opinion, political incorporation, electoral behavior, and minority representation.

Sp Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor.

**707.01 Seminar in Race and Ethnicity in American Politics U G 5**

Introduction to the central research areas and literature of the field of race and ethnicity in American politics.

**707.02 Selected Topics in Race and Ethnicity in American Politics U G 5**

Intensive readings and discussions on selected topics in the study of race and ethnicity in American politics.

**709 Seminar in American Politics U G 5**

Introduction to the central research areas and literature of the field of American politics.

Wi Qtr. 5 cl. Prereq: Grad standing in polit sc or permission of instructor. Not open to students with credit for this topic under 894.

**711 Organized Interest Groups G 5**

Roles and impact of interest groups in American politics, including formation, recruitment, and maintenance of organizations; grassroots mobilization; and lobbying in legislatures, courts, and bureaucracies.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing.

**712 Gender and American Politics U G 5**

An examination of the role of gender in American politics, including public opinion, electoral behavior, political institutions, and policy making.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**715 Judicial Politics: Process and Policy Making U G 5**

Examination of the judicial process with emphasis on the work of trial courts and the roles of courts as policy makers.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**716^ Judicial Politics: Decision Making U G 5**

Examination of decision making in appellate courts.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**717 Readings in Legislative Politics and Policy-Making U G 5**

A theoretical-empirical analysis of the functioning and policy product of American legislatures; intensive reviews of selected aspects of the legislative literature to be conducted.

2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**725 Basic Theories in the Study of Comparative Politics U G 5**

Examination of such concepts and theories as structural-functional analysis; general systems theory; and sociocultural systems as determinants of governmental structures.

3 cl. Prereq: Grad standing or permission of instructor.

**726 Methods and Approaches in Comparative Politics G 5**

Overview of the various approaches, methods, and data used in comparative politics; discussion of the strengths and shortcomings of each approach.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**727^ Problems in Western European Politics U G 5**

Intensive study of selected problems.

1 2-hr cl. Prereq: 627 and grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**730 Seminar in Soviet and Post-Soviet Politics G 5**

Introduction to the literature on Soviet politics; examination of theoretical and empirical analyses of socio-economic and political transformation in the Soviet successor states.

Wi Qtr. 2 2-hr cl.

**731^ Problems in Post-Soviet Politics G 5**

An intensive examination of selected problems such as elite conflict, party formation, institutionalization, nationalism, and interstate relations within the CIS.

1 3-hr cl. Prereq: 630 or 655; and grad standing or permission of instructor.

**734^ Readings on Chinese Politics U G 5**

A seminar for the purpose of reading advanced scholarly materials on contemporary Chinese politics.

1 3-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**735 Comparative Political Economy G 5**

A graduate-level course designed to survey contemporary theories on the interaction between economic policies, domestic institutions, the international economy, and their consequences on the macroeconomy.

Wi Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in Econ 735. Cross-listed in Economics.

**740^ Problems in Latin American Politics U G 5**

An advanced seminar devoted to a structured examination of the major theories, concepts, and approaches used in the analysis of Latin American politics.

1 3-hr cl. Prereq: 562 or 640; and grad standing or permission of instructor.

**741 Politics of the Developing World U G 5**

Theories, approaches, and methods in the analysis of political life in Asia, Africa, and Latin America; discussion of selected case and cross-national studies with theoretical importance.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**742 Political Issues in Economic Development G 5**

Political factors that have affected the economic development of the western world and the developing areas.

Au Qtr. 1 3-hr cl. Prereq: Grad standing in the social and behavioral sciences or permission of instructor.

**743 Peasant Politics U G 5**

Intensive study of selected aspects of peasant political behavior, with particular attention to non-institutionalized political participation and collective action.

Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor.

**744 Democratic Transitions U G 5**

Theoretical examination of the dynamics of the transition from authoritarian to democratic regimes, with special attention to Southern Europe and South America.

Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor.

**745 Basic Theories in the Study of International Politics U G 5**

Examination of such basic concepts and theories as equilibrium models, balance of power, national interest, geopolitical configurations.

2 3-hr cl. Prereq: Grad standing or permission of instructor.

**746 Synthesizing International Politics Scholarship U G 5**

Synthesis of international politics research and writings, intended for advanced graduate students.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**747 Research Methods in International Politics U G 5**

Examines a number of research techniques and approaches common in international politics such as content analysis, simulation, mathematical modeling, and factor analysis.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**748 Social Theories of International Politics U G 5**

An examination of the main themes, debates, and social theories of world politics.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**750 Research on Cognition in International Politics U G 5**

Problem representation and research in cognition in international politics and foreign policy, including computational research, text analysis, and experimentation examining such cognition.

Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**751<sup>+</sup> Conflict and Peace U G 5**

Sources and types of social conflict with special attention to international violence; causes of war, their avoidance and control.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**752 Security Policy for the Post-Cold War World U G 5**

Theories of conflict and war causation and an assessment of their durability in a new era of world politics.

Wi Qtr. 2 2-hr cl. Prereq: Any prior course work in international relations and permission of instructor, or grad standing.

**753 Theories of International Political Economy U G 5**

Contemporary literatures in international political economy; their ties to classical schools of thought in international relations and political economy; points of contention between them.

2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**754 Selected Topics in Soviet and Post-Soviet Foreign Policy G 5**

Intensive readings and discussions on methodological and theoretical research issues in Soviet and post-Soviet foreign policy processes and outcomes.

2 2-hr cl. Prereq: 630 or 655 or equiv, or grad standing, or permission of instructor.

**755<sup>+</sup> American Foreign Policy Making U G 5**

An examination of various approaches used to explain American foreign policy behavior including the rational actor, policy process, and bureaucratic politics models.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**756 Foreign Policy Design U G 5**

Problems of designing foreign policy including organizational, contextual, economic, and public opinion constraints; how to create an information retrieval system to aid decision-making.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**757 Comparative Foreign Policies U G 5**

Examines comparatively the sources and classes of behavior of territorial actors in the international political system.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**759 International Organization U G 5**

Comprehensive view of international governmental, non-governmental, and business organizations; their roles in solving problems such as poverty, war, pollution; particular attention to the U.N. system.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**760 Transnational Relations U G 5**

Comprehensive view of nongovernmental relations (trade, agriculture, science, religion, health, labor) between people in different nation-states with particular attention to opportunities for increased citizen control.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**761 Political Psychology and International Relations G 5**

A seminar introducing students to theories of international relations that employ psychological perspectives; cognitive world views and political identity, especially nationalism, receive special attention.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**762 Theory and Explanation in Political Science U G 5**

A survey of topics in the methodology and philosophy of social science including: logic, conceptualization, explanation, theory; applications to criticism in political science.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**765 Interpretation of Texts in Political Theory U G 5**

Approaches to interpretation of texts of political theory, contemporary as well as classic, grounded in study of selected texts.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**766 Selected Topics in Political Theory U G 5**

Intensive joint readings and discussions concentrating upon one of the major themes, problems, or movements in political theory; topic information available from instructor.

1 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**767 Evaluation in Politics U G 5**

The nature and foundations of political evaluation; methodological problems and substantive theories for the evaluation of institutions, public policy, and approaches to policy analysis.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**768 Contemporary Political Analysis U G 5**

An examination of theories and concepts used in modern qualitative political analysis, including attention to political economy and political institutions.

1 3-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**774 Readings in Political Participation and Voting Behavior U G 5**

Intensive examination of literature on selected topics in the area of participation and voting behavior in the United States.

2 2-hr cl. Prereq: 674 or equiv, and grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**775<sup>+</sup> Readings in American Political Parties U G 5**

Intensive study of literature on selected aspects of American political parties.

3 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**776 Comparative Political Institutions U G 5**

Study of state building process, regime types, and contemporary governmental institutions from a broad cross-national perspective.

3 cl. Prereq: Grad standing or permission of instructor.

**777 Comparative Political Behavior U G 5**

A cross-national examination of political behavior, including such topics as socialization, participation, voting, elite behavior, mass-elite linkages.

3 cl. Prereq: Grad standing or permission of instructor.

**778 Comparative Political Parties and Interest Groups U G 5**

Comparative analysis of the nature and role of political parties and interest groups in contemporary societies.

3 cl. Prereq: Grad standing or permission of instructor.

**779 Readings on the Policy Process U G 5**

Consideration of the basic theories, concepts, and techniques used in policy analysis; the determinants of public policy; and the impact and evaluation of public policy.

2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**780 The Field of Political Economy G 5**

The modern field of political economy; the interaction of markets and politics as well as the use of the tools of economics to explain social behavior.

Wi Qtr. 2 2-hr cl. Not open to students with credit for Econ 780. Cross-listed in Economics.

**H783 Honors Research U 3-5**

Prereq: 4th yr standing and 40 cr hrs in social sciences, including 15 cr hrs in polit sc with a record of A in at least half of the polit sc courses and an average of B in the remainder; and permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degree BA with distinction in polit sc. Failure to receive a mark of S in this course is a disqualification for special honors. A special topic is assigned to each student and results are tested by the requirement of papers and special examinations. This course is graded S/U.

**786<sup>+</sup> Causal Analysis U G 5**

Analysis of causal models by Simon-Blalock techniques, recursive and nonrecursive path estimation; special topics include measurement error, standardization, and ordinal data.

2 2-hr cl. Prereq: 685, 686, and grad standing or permission of instructor.

**787<sup>+</sup> Scaling and Dimensional Analysis in Political Science U G 5**

Topics include measurement and data theory, unfolding, proximity and dominance (Guttman) scaling, multidimensional scaling, and factor analysis.

2 2-hr cl. Prereq: 685, 686, and grad standing or permission of instructor.

**788<sup>A</sup> Mathematical Theories of Politics U G 5**

Introduction to various major mathematical theories of political phenomena and the role of formal analysis in political science.

2-2-hr cl. Prereq: 790 or equiv, and grad standing or permission of instructor.

**789 Survey Research Practicum G 5**

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

Sp Qtr. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in AED Econ, Agr Educ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Psych, Pub Hlth, PubPol&M, Sociol, and Stat. Cross-listed in AED Econ, Agr Educ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Psych, Pub Hlth, PubPol&M, Sociol, and Stat.

**790 Foundations of Political Science U G 5**

Introductory study of diverse efforts to ground knowledge of politics, positivist and post-positivist views of science, sources of formal rigor, and interpretation and evaluation.

2 2-hr cl or equiv. Prereq: Grad standing or permission of instructor.

**793 Individual Studies**

Individual studies in political science; student work is evaluated by papers and/or special examinations.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 50 cr hrs in any combination of decimal subdivisions, with not more than 20 cr hrs in a single subdivision.

**793.01 American Politics U G 1-5**

Repeatable to a maximum of 50 cr hrs. This course is graded S/U.

**793.02 Comparative Politics U G 1-5**

Repeatable to a maximum of 50 cr hrs. This course is graded S/U.

**793.03 International Politics U G 1-5**

Repeatable to a maximum of 50 cr hrs. This course is graded S/U.

**793.04 Political Theory U G 1-5**

Repeatable to a maximum of 50 cr hrs. This course is graded S/U.

**793.05 Public Policy U G 1-5**

Repeatable to a maximum of 50 cr hrs. This course is graded S/U.

**795 Teaching Political Science G 2**

Examination of issues in teaching political science in colleges and universities and preparation for teaching careers.

Wi Qtr. 1 2-hr cl. Prereq: Grad standing in polit sc. This course is graded S/U.

**800 Research Seminar in American Politics**

Repeatable hrs include hrs earned in 894.

**800.01 Design of Research in American Politics G 5**

Development of a research design on a selected topic in American politics; consultation on substantive and methodological problems offered by faculty.

Wi Qtr. 1 2-hr cl, arr time. Prereq: 45 cr hrs of graduate work in polit sc or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**800.02 Research in American Politics G 5**

Execution of a research design on a selected topic in American politics; consultation on substantive and methodological problems offered by faculty.

Sp Qtr. 1 2-hr cl, arr time. Prereq: 800.01 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**803<sup>A</sup> Research in Public Opinion G 5**

Development and execution of a research design focusing on a problem in American public opinion; consultation on substantive and methodological problems offered by instructor.

1 2-hr cl. Prereq: 702 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**805 Experimental Research in Political Psychology G 5**

Experimental methods appropriate for research in political psychology.

Wi Qtr. 2 2-hr cl. Prereq: 892 and grad standing; or permission of instructor.

**812 Seminar: Political Elites and Leadership G 5**

Advanced research seminar on political leadership behavior and political elite structure.

Sp Qtr. 2 2-hr cl.

**817<sup>A</sup> Research in Legislative Politics and G 5**

Development and execution of a research design focusing on a particular problem in American legislative research; consultation on substantive and methodological problems offered by instructor.

1 2-hr cl. Prereq: 717 or equiv. Repeatable to a maximum of 10 cr hrs.

**826 Research in Comparative Politics G 3-5**

Research seminar on various topics in comparative politics.

1 2-hr cl. Prereq: 2 polit sc courses in foreign governments at 600-level or above, or equiv. Repeatable to a maximum of 15 cr hrs.

**846 Research in International Politics G 3-5**

Research seminar in international politics.

1 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**848 Quantitative Approaches to International Relations G 5**

Introduction to some ways that quantitative methods have been used to address topics in the field of international relations.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**853 Advanced Research in International Political Economy G 5**

Advanced study and research in international political economy.

Wi Qtr. 1 3-hr cl. Prereq: 753 or permission of instructor.

**866 Research in Political Theory G 5**

Research seminar in political theory; intensive treatment of selected topics.

1 2-hr cl. Repeatable to a maximum of 10 cr hrs.

**867 Research in Mathematical Political Science G 5**

Design and examination of research focusing on a problem in mathematical political science.

2 2-hr cl. Repeatable to a maximum of 10 cr hrs.

**874 Research in Mass Political Behavior G 5**

Development and execution of a research design focusing on a problem in electoral or public opinion research; consultation with instructor on substantive and methodological issues.

1 2-hr cl. Prereq: 703 or 774 or equiv. Repeatable to a maximum of 10 cr hrs.

**875<sup>A</sup> Research on American Political Parties G 5**

Development and execution of a research design focusing on a problem relating to American political parties; consultation on substantive and methodological problems offered by instructor.

1 2-hr cl. Repeatable to a maximum of 10 cr hrs.

**879 Research on Public Policy G 5**

Research into the process of policy making and the substance of public policy; consultation on substantive and methodological problems offered by instructor.

1 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**889 Internship in Politics and Public Policy G 1-15**

Combines experience in political institutions or policy processes with analysis of that experience in light of relevant scholarly literature.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**892 Workshop G 1-5**

Intensive study of an area or problem in political science.

Arr cl. Repeatable to a maximum of 15 cr hrs.

**894<sup>A</sup> Group Studies: Contemporary Political Problems G 5**

Group studies to examine specific contemporary political problems.

5 cl. Repeatable to a maximum of 30 cr hrs.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

Repeatable with permission.

**999 Research in Political Science G 1-18**

Research for thesis or dissertation purposes only.

Repeatable. This course is graded S/U.

## Portuguese

266 Cunz Hall, 1841 Millikin Road, 292-4958

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 and then move on to advanced courses. Students with knowledge of Spanish, however, may choose the condensed introductory sequence 501-502 instead. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence through the 104 level.

Information concerning course frequency and quarter(s) of offering, if not specified, may be obtained by contacting the department.

**101 Elementary Portuguese U 5**

Elements of Portuguese grammar, with oral and written exercises; attention to ear training, oral practices and customs.

Au Qtr. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.



**102 Elementary Portuguese**

Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

**102.01 Elementary Portuguese U 5**

The elements of Portuguese grammar with abundant oral and written exercises; development of conversational skill; reading, vocabulary building.

Wi Qtr. Prereq: 101.

**102.40 Beginning Portuguese for Students with Previous Spanish U 5**

Beginning Portuguese for students with two or more years of high school Spanish, or equivalent; focus on strong similarity of sister languages.

Au Qtr. Prereq: 2 yrs high school Spanish.

**103 Intermediate Portuguese U 5**

Continuation of Portuguese grammar; reading of short stories, plays, and novels; increased attention to development of oral proficiency.

Wi Qtr. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

**104 Intermediate Portuguese U 5**

Reading of Portuguese plays, short stories, and novels; emphasis on oral practice; non-fiction of cultural and historical significance.

Sp Qtr. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

**202 Portuguese Conversation and Composition U 5**

Intensive practice in conversation and composition based on materials concerning current life in Brazil and Portugal, with thorough review of grammar.

Wi Qtr. 5 cl. Prereq: 104 or 502 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

**330 Introduction to Brazilian Culture U 5**

Integrated, multidisciplinary overview of modern Brazilian culture in terms of its visual, plastic, musical, literary, dramatic, and popular arts within socio-economic and political context.

Au Qtr. 2-2-hr cl. Knowledge of Portuguese not needed. GEC arts and hums cultures and ideas course.

**401 Review Grammar and Composition U 5**

Review of Portuguese grammar; compositions based on readings.

Sp Qtr. 3 80-min cl. Prereq: 104.

**501 Portuguese for Spanish Speakers I U G 5**

Rapid introduction to Portuguese language intended for students with at least intermediate-level Spanish skills.

Su, Su Term 1 Qtr. 5 cl. Prereq: Spanish 201 or equiv. Not open to students with credit for 101, 102, 103, or 104.

**502 Portuguese for Spanish Speakers II U G 5**

Continuation of 501; Portuguese language for students with at least intermediate-level Spanish skills.

Su, Su Term 2 Qtr. 5 cl. Prereq: 501. Not open to students with credit for 101, 102, 103, or 104.

**510 Portuguese Translation U G 5**

Advanced practice in Portuguese-to-English translation based primarily on the contemporary written Portuguese of Brazil and Portugal; emphasis on formal grammar and style.

Au Qtr. 3 80-min cl. Prereq: 401 or permission of instructor.

**551 Survey of Portuguese and Brazilian Literatures I U G 5**

Overview of Portuguese and Brazilian literatures from the 12th to 18th centuries, with emphasis on representative authors and literary works.

Au Qtr. 2-2-cl. Prereq: 401, or 502 and grad standing, or permission of instructor. Not open to students with credit for 620.

**552 Survey of Portuguese and Brazilian Literatures II U G 5**

Overview of Portuguese and Brazilian literatures from the 19th and 20th centuries, with emphasis on representative authors and literary works.

Wi Qtr. 2-2-cl. Prereq: 401, or 502 and grad standing, or permission of instructor. Not open to students with credit for 621.

**560^ Portuguese Culture and Civilization U G 5**

The culture of Portugal and Portuguese Africa from their founding to the present through the study of selected Portuguese-language literature, news, and film.

2-2-hr cl. Prereq: 202 or equiv.

**561^ Brazilian Culture and Civilization U G 5**

Study of the development of Brazilian culture through its Portuguese language, literature, folklore, music, art, and film; special emphasis on contemporary issues.

Wi Qtr. 2-2-hr cl. Prereq: 401 or permission of instructor.

**611^ The Portuguese Language U G 5**

Phonetic transcription from tapes of major continental and Brazilian dialects; the phonological pattern of modern Portuguese; general characteristics of its historical evolution from Hispano-Romance.

4 cl, 1 lab hr. Prereq: 102 and jr standing, or permission of instructor.

**650\* Topics in Literature of the Portuguese-Speaking World U G 5**

Intensive exploration of a specific topic or problem; topic varies, for example: modern Brazilian novel, Luso-African literature, Portuguese poetry since 1974.

Sp Qtr. 2-2-hr cl. Prereq: 551 and 552, or 502 and grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in 623.

**693 Individual Studies U G 1-15**

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**730 Studies in Portuguese Linguistics G 5**

Analysis of Portuguese morphology and phonology using contemporary linguistic framework; topic varies from year to year and may be historical or synchronic.

Wi Qtr. 2-2-hr cl. Prereq: Linguistics 601 or Spanish 730, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**893 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-15**

Investigation of minor problems in the various fields of Portuguese literature and language.

Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

## Psychiatry

140 Neuropsychiatric Hospital, 1670 Upham Drive, 293-8282

**793 Individual Studies in Psychiatry P G 1-18**

A supervised, scholarly investigation of some aspects of psychiatry in which there is interest by the student and expertise by the faculty.

Su, Au, Wi, Sp Qtrs. Prereq: Adequate clinical training in psychiatry and permission of chairperson and instructor. Repeatable to a maximum of 18 cr hrs. 1, 2, or 3 months. This course is graded S/U.

**850 Seminars in Psychiatry G 1-6**

1 cl. Prereq: Permission of chairperson and instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

A - Clinical Psychiatry

B - Group Therapy

C - Psychotherapy

D - Psychiatric Literature

E - Child Psychiatry

**999 Psychiatry Research G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: MD and residency in psychiatry. Repeatable. This course is graded S/U.

## Psychology

142 Townshend Hall, 1885 Neil Avenue, 292-6741

### 100 General Psychology U 5

Introductory psychology, a prerequisite to advanced courses; the application of the scientific method to behavior; topics include learning, motivation, perception, personality, physiological basis of behavior.

Au, Wi, Sp Qtrs. 5 cl. H100 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. SS Admis Cond course. This course is available for EM credit. GEC soc sci individuals and groups course.

### 120 The Psychology of Academic and Personal Effectiveness U 3

A survey of theories and practices designed to improve higher level skills in reading, perception, learning, and adjustments.

Au, Wi, Sp Qtrs. 2 cl, 1 2-hr lab.

### 300 Research in Psychology: An Introduction U 4

An overview of issues, methods, and techniques of scientific psychological research.

Au, Wi, Sp Qtrs. 3 1-hr cl or 2 1.5-hr cl. Prereq: 100.

### 302 Introduction to the Psychology of Listening and Reading U 4

The recognition of spoken and written words will be traced from their registration by the senses to their storage in memory.

Au Qtr. 2 cl, 1 disc/lab. Prereq: 100 and 219 or 320. Not open to students with credit for 602.

### 310 Basic Psychology: Perception U 4

Theory, methods, and physiological correlates of sensory and perceptual processes; emphasis on the relation of behavior to stimulus variation.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 100, and 219 or 320 or Stat 145 or 245.

### 311 General Psychology: Motivation and Action U 3

A behavioristic presentation of experimental work on learning and motivation.

Wi Qtr. 3 cl. Prereq: 100; prereq or concur: 219 or 320, or Stat 145 or 245.

### 312 Learning, Memory, and Cognition U 4

An introduction to experimental study of human memory, learning, and cognition.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 100; and 219 or 220 or 320, or Stat 145 or 245.

### 313 Introduction to Psychobiology U 3

Introduction to the neuronal and behavioral foundations of psychobiology.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 300.

### 320 Introduction to Data Analysis in Psychology U 5

Introduction to statistical data analysis; random samples, graphical and numerical techniques of descriptive statistics, correlation, regression, probability, sampling distribution, and hypothesis testing.

Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. Prereq: Math 152 or equiv. Not open to students with credit for 219 or 394 Sp Qtr 1995.

### 321 Quantitative and Statistical Methods in Psychology U 4

A concentrated examination of applications of statistical tools in inference in contemporary psychology; hypothesis testing, regression, correlation, and analysis of variance.

Au, Sp Qtrs. 2 cl, 1 2-hr lab. Prereq: 100; and 219 or 320, or Stat 145 or 245. Not open to students with less than a grade of C- in 219 or 320; or to students with credit for 221.

### H321 Quantitative and Statistical Methods in Psychology U 5

A concentrated examination of applications of statistical tools in inference in contemporary psychology; hypothesis testing, regression, correlation, and analysis of variance.

Au, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: 100 or permission of instructor; 320, or Stat 145 or 245; and honors standing. Not open to students with less than a grade of C- in 219 or 320; or to students with credit for 221.

### H325 Introduction to Social Psychology U 5

An in-depth, empirically based introduction to research in social psychology; topics include individual motivation, group behavior, attitudes, and perception of self and others.

Sp Qtr. 2 2-hr cl. Prereq: 100, enrollment in an honors program, and permission of instructor. Not open to students with credit for 367.01. Designed for psych majors.

### 331 Psychopathology and Psychotherapy I U 3

Examination of current problems, issues, theories, and approaches to psychological deviance.

Au, Wi, Sp Qtrs. 3 cl. H331 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 331: 100. Prereq for H331: 100 and 3.2 CPHR, or permission of instructor. Not open to students with credit for 330.01.

### 332 Psychopathology and Psychotherapy II U 3

Continuation of 331; focus on psycho-therapeutic approaches.

Au Qtr. 3 cl. Prereq: 331.

### 335 Psychology of Adjustment U 4

Examination of psychological concepts and theories related to individual adjustment and adaptation.

Su, Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 100.

### 340 Introduction to Life Span Developmental Psychology U 3

A survey of developmental psychology including some phylogenetic perspective.

Au Qtr. 3 cl. Prereq: 100.

### 350 Contemporary Issues in Developmental Psychology U 3

A survey course acquainting students with issues resulting from the social changes of the past decade and from an increased interest in the life span.

Wi Qtr. 3 cl. Prereq: 100.

### 367 Second Writing Course

Au, Wi, Sp Qtrs. 2 2-hr cl or 4 cl. Prereq: 100, English 110 or 111 or equiv, and soph standing or above. GEC second writing courses.

#### 367.01 Social Psychology U 5

Survey of group processes as they affect individual behavior; topics include individual motivation, group behavior, attitudes, and perception of self and others.

H367.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor.

#### 367.02 Applications of Psychology U 5

Introduction to fields of applied psychology, use of psychological methods and principles in understanding and solving problems in a variety of organizational settings.

### 371 Language and the Mind U 5

Introduction to psychological processes for producing and understanding speech, the means by which these processes arise in the child, and their bases in the brain.

Su, Au, Wi, Sp Qtrs. 3 1.5-hr cl. H371 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 100 or Linguist 201 or 202. Not open to students with credit for Linguist 271 or 371. Cross-listed in Linguistics. GEC soc sci individuals and groups course.

### 375 Stereotyping and Prejudice U 4

Lectures address experimental research in stereotyping and prejudice; readings focus on historical, cultural, and sociological perspectives on issues related to gender, ethnicity, and social class.

Wi Qtr. 3 cl. Prereq: 100. GEC social diversity course.

### 394^ Group Studies U 1-5

Undergraduate seminar; topics vary and will be announced.

Su, Au, Wi, Sp Qtrs. Prereq: 100. Repeatable to a maximum of 10 or hrs. Including cr hrs earned in 294.

### 475 The Self U 5

Survey of classic and contemporary theory and research on social psychological study of the self; diverse approaches, and various gender, ethnic, and cross-cultural perspectives.

Wi Qtr. 2 2-hr cl. Prereq: 367.01 or 367.02 or 375.

### 500 Experimental Psychology U 5

An overview of experimental methodological techniques with experiments selected for cultural value; as preparation for technical study; and to represent paradigms used in human and animal research.

Wi Qtr. 2 cl, 3 lab hrs. Prereq: 219 or 220 or 320, or Stat 145 or 245, and 6 cr hrs above 300, including at least one of 310, 311, or 312; and English 110 or 111; or equivs with written permission of instructor. Open only to psych majors. GEC third writing course.

### 501 Advanced Psychobiology U G 4

Advanced discussion of contemporary issues in psychobiology, including: synaptic pharmacology, drugs, and behavior, neurodegenerative diseases and the biological bases of psychopathology.

Wi Qtr. 2 1.5-hr cl. Prereq: 313.

### 503 Introduction to Cognitive Psychology U G 4

A study of cognitive processes from an information processing perspective; including attention, memory, language representation, reasoning, problem solving, and others.

Au Qtr. 2 2-hr cl. Prereq: 320 or 321, or Stat 145 or 245, and 310 or 312, or permission of instructor.

### H504 Control Theory and Skilled Behavior U 5

Control theory is explored as an analytic tool for understanding skilled behavior.

Au Qtr. 3 cl, 2 lab hrs. Prereq: Math 152 or equiv, or permission of instructor.

**505 Contemporary Viewpoints in Psychology U G 3**

A consideration of the development of modern scientific psychology from its roots in the school of the 19th century to its contemporary status.  
Sp Qtr. 3 cl. Prereq: 100 and an additional 11 cr hrs in psych.

**H506 Contemporary Issues in Neuroscience U 2**

Distinguished OSU neuroscientists will discuss contemporary issues, methodologies, results and future directions within their respective fields, including: molecular/cellular, integrated systems/behavioral and clinical neuroscience.

Sp Qtr. 1 1.5-hr cl. Prereq: Permission of instructor.

**508 Psychology of Judgment and Decision-Making U 5**

An overview of current models and empirical research on cognitive processes in human decision-making and judgment under risk or uncertainty. Au, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab, field trips may be required. H508 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 219 or 320, or Stat 145 or 245 or equiv; or permission of instructor.

**510 Research Methods in Cognitive Psychology U 5**

Issues in experimental design; laboratory experiments include topics such as memory, perception, and attention.

Au, Wi, Sp Qtrs. 2 cl, 1 3-hr lab. Prereq: 219 or 220 or 320, or Stat 145 or 245; and jr or sr standing. Open only to psych majors. Not open to students with credit for 500. GEC third writing course.

**511 Psychological Testing U G 4**

An overview of theoretical and practical aspects of the assessment and prediction of human behavior; topics include achievement, intelligence, personality, attitudes, interests, and interpersonal relations.

Wi Qtr. 2 2-hr cl. Prereq: 100; 219 or 221 or 320 or 321 or Stat 145 or 245.

**513 Introduction to Cognitive Neuroscience U 4**

Examination of the neuroscientific approach to the study of cognition; primary focus on the psychobiology of memory, attention, language, and spatial orientation.

Au Qtr. 2 1.5-hr cl. Prereq: 313 or permission of instructor.

**H515 The Unconscious U 5**

Exploration of what scientific psychology has found out about unconscious processes in the human mind, and how they affect mood, judgements, thoughts, goals, and behavior.

Au Qtr. 2 2-hr cl. Prereq: 300, 367.01, and enrollment in an honors program; or permission of instructor. Psych majors preferred.

**520 Experimental Social Psychology U 5**

Training in experimental and qualitative methods in social psychology.

Au, Wi, Sp Qtrs. 2 cl, 4 lab hrs. Prereq: 219 or 221 or 320 or 321, and Stat 145 or 245 and 367.01, and permission of instructor. Open only to psych majors. GEC third writing course.

**521 Personnel Psychology U G 4**

Overview of theory, method, and practices of personnel psychology: job analysis, recruiting, personnel section, performance appraisal, and training.

Au, Wi Qtrs. 2 1.5-hr cl. H521 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 219 or 220, or 320, or Stat 145 or 245.

**522 Organizational Psychology U G 4**

Overview of theory, method, and practice of organizational psychology: motivation, job attitudes, leadership, groups, organizational design.

Au, Sp Qtrs. 2 1.5-hr cl. H522 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 100; and 219 or 220, or 320 or Stat 145 or 245.

**530 Psychology of Personality U G 3**

Major theoretical and research orientations in the study of personality; consideration of psychological processes involved in the attribution of personality characteristics.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 100 and an additional 5 cr hrs in psych.

**531 Clinical Psychology and Alternative Aspects**

Prereq: 100 and an additional 10 cr hrs in psych.

**531.03 Health Psychology U 4**

Introduction to health psychology: health-promoting and health-damaging behaviors; modification of health behaviors; stress and coping; management of illness; stress management strategies.

Sp Qtr. 2 1.5-hr cl.

**539^ Stress, Social Support, and the Professional Helper U G 3**

Stress at work and elsewhere; emphasis on treatment through social support.

Wi Qtr. 3 cl. Prereq: 100 and an additional 5 cr hrs of course work in psych. Not open to students with credit for 640. Designed for health professionals, personnel workers, teachers, and related specialists in human services.

**540 Counseling Psychology: An Introduction U G 4**

Introduction to the theories, research, and practice of counseling psychology. Au, Wi, Sp Qtrs. 3 cl. Prereq: 100 and an additional 5 cr hrs in psych.

**541^ Educational and Vocational Appraisal U G 4**

Theory and techniques of assessment of individual characteristics; assessment techniques used in counseling situations.

Su, Au Qtrs. 3 cl. Prereq: 100 and an additional 5 cr hrs of course work in psych.

**542^ Vocational Psychology U G 3**

Survey of the psychological aspects of work and their implication for vocational development; the use of labor force and occupational information in vocational choice.

Au Qtr. 3 cl. Prereq: 100 and an additional 5 cr hrs of course work in psych.

**543\* Psychology of Women U G 5**

Exploration of the nature and causes of sex differences in behavior patterns and factors influencing development of women through psychological theory and research.

Wi Qtr. 4 cl. Prereq: 100 and an additional 7 cr hrs in psych. Not open to psych grad students.

**545 Cross-Cultural Psychology U G 4**

Introduction to cross-cultural theories and research in various specialties in psychology (e.g., social, developmental, and abnormal psychology).

Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 100.

**550 Psychology of Childhood U G 4**

Presentation of psychological aspects of growth and development in early and middle childhood.

Su, Au, Wi, Sp Qtrs. 3 cl. H550 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 100.

**551 Adolescence U G 5**

An examination of the biological, psychological, and social aspects of normal adolescent development.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 100.

**552 Psychology of the Adult Years U G 3**

Theory and research related to adulthood as a sequence of psychological stages involving adjustment and coping behaviors; relationship of adulthood to other life-span stages.

Sp Qtr. 3 cl. Prereq: 100.

**560 Educational Psychology U G 3**

Critical appraisal of the implications for education of modern psychological findings in advanced educational psychology.

Su Qtr. 3 cl. Prereq: 100 and an additional 5 cr hrs in psych.

**571 Psychology of Developmental Disabilities U G 4**

Overview of developmental disabilities including causes, nature, and psychological characteristics; diagnosis and psychometric assessments; and behavioral, psycho-educational, and biological forms of prevention and intervention.

Sp Qtr. 3 cl. Arr 20-hr practicum at select off-campus sites involving active, hands-on experience. Prereq: 100 and an additional 5 cr hrs in psych; or written permission of instructor.

**H571 Psychology of Developmental Disabilities U G 5**

Critical examination of current research issues in the psychology of developmental disabilities.

Wi Qtr. 2 2-hr cl, arr 20-hr practicum at select off-campus sites involving active, hands-on experience. Prereq: 100, 221 or 321, 500, and 5 additional cr hrs in psych or written permission of instructor.

**594 Group Studies U G 1-5**

Topics vary from quarter to quarter and will be announced at least one month in advance.

Su, Au, Wi, Sp Qtrs. H594 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 100 and an additional 5 cr hrs in psych. Repeatable to a maximum of 10 cr hrs.

**600 Psychology of Learning U G 5**

The study of principles which underlie the discovery, fixation, and retention of behavior; emphasis on theoretical formulation of the conditions necessary for learning and remembering.

Au Qtr. 4 cl. Prereq: 100 and an additional 5 hrs in psych.

**601 Comparative Psychology U G 3**

Research on animal behavior by psychologists and ethologists; studies of the behavior of different species in the lab and in the field.

Au Qtr. 3 cl. Prereq: 100 and an additional 15 cr hrs in psych or zoology, or permission of instructor.

**603 Visual Perception U G 3**

Principles, theories, and methods relevant to the study of visual perception; emphasis on the availability and usefulness of visual information.

Au Qtr. 3 cl. Prereq: 310 or permission of instructor.

**606 High-Level Vision U G 4**

Visual perception of solid shape, models of object recognition, perception of self-motion and of action.

Wi Qtr. 2 1.5-hr cl. Prereq: 310 or 603 or permission of instructor.

**608\* Introduction to Mathematical Psychology U G 3**

Survey of current topics in mathematical psychology; topics include measurement theory, scaling, utility theory, subjective probability, decision making in uncertain situations, choice theory.

Au Qtr. 3 cl. Prereq: 221, or 321 or equiv, or permission of instructor. Not open to students with credit for 615.

**609\* Introduction to Mathematical Models in Experimental Psychology U G 4**

A survey of mathematical models and theories in important areas of experimental psychology; models of perceptual and cognitive processes, memory, and learning.

Wi Qtr. 2 2-hr cl. Prereq: 221, or 321 and 608; or grad standing.

**610\* Contemporary Mathematical Models and Theories in Psychology U G 4**

Topics include axiomatic, geometric, conjoint measurement, functional measurement, and artificial intelligence models.

Sp Qtr. Prereq: 221, or 321 and 608; or grad standing.

**612 Introduction to Cognitive Science U G 3**

Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.

Au, Wi Qtrs. 2 1.5-hr cl. Prereq: Permission of instructor or a total of 12 cr hrs from at least two of the following areas: cptr/inf, linguist, philos, and psych. Not open to students with credit for 794 (Sp Qtr 1989) or 794A (Wi Qtr 1990), Cptr/Inf 612, Linguist 612, Philos 612. Cross-listed in Computer and Information Science, Linguistics, and Philosophy.

**615<sup>A</sup> Psycholinguistics U G 5**

An introduction to high-level language processing, including word recognition, sentence understanding, and discourse processing.

Wi Qtr. 3 1.5-hr cl. Prereq: Linguist 601 or permission of instructor. Not open to students with credit for Linguist 615 or 671. Cross-listed in Linguistics.

**616<sup>A</sup> Psychological Scaling U G 4**

Theory and applications of unidimensional and multidimensional scaling methods for proximity and preference data; emphasis on multidimensional scaling.

Wi Qtr. 2 2-hr cl. Prereq: 608 or grad standing.

**619<sup>A</sup> Visual Information Processing U G 5**

Rapid visual decisions: how the visual representation is formed, stored, and interpreted, enabling one to read, drive, and look for and compare visual objects.

Sp Qtr. 3 cl. Prereq: 100 and an additional 7 cr hrs of psych beyond the 300 level (310 or 312 or 500 recommended).

**620 Human Performance U G 5**

Research and theory on perceptual, cognitive, and motor processes that limit performance; topics include memory, attention, pattern discrimination, motor control.

Au Qtr. 2 cl. Prereq: 100 and an additional 7 cr hrs of psych beyond the 300 level (310 or 312 or 500 recommended).

**624 Psychology of Monkeys and Apes U G 3**

Research about monkeys and apes with emphasis on their learning, arts, memory, curiosity, language, and neuropsychological problems.

Wi Qtr. 3 cl. Prereq: 100 or permission of instructor.

**625 Introduction to Auditory Perception U G 3**

Theory and research in auditory perception; traditional psychoacoustic and new ecological approaches.

Au Qtr. 3 cl. Prereq: 100; and 219 or 220 or 320, or Stat 145 or 245; and 310.

**626 Sensory Psychobiology U G 3**

Introduction to neural mechanisms of sensation: transduction, neuroanatomy, neurochemistry, and neurophysiological coding mechanisms for vision, audition, somatosensation, visceral sensation, balance, taste, and smell.

Au Qtr. 1 2.5-hr cl. Prereq: 501 or EEOB 532 or 632, or permission of instructor.

**627 Developmental Psychobiology U G 4**

The psychobiological origins of mammalian behavior, including: neural development, sensorimotor and cognitive development, and recovery of function after brain damage.

Sp Qtr. 2 1.5-hr cl. Prereq: 313 or 501 or permission of instructor.

**630\* Psychology of Public Attitudes U G 3**

Attitude organization and change; study of the determinants of attitude.

Au Qtr. 3 cl. Prereq: 219 or 220 or 320, or Stat 145 or 245; and 367.01.

**652 Behavior Modification with Children and Youth U G 3**

Theory and practice of behavior modification; emphasis on experience with individual children and youth and consultation within applied settings.

Sp Qtr. 1 3-hr cl, lab arr. Prereq: 571 or equiv, 600, and permission of instructor. Not open to students with credit for 852.01.

**662 Psychology of Creativity U G 3**

A critical examination of conceptual, theoretical, and methodological problems related to the systematic study of creativity; special attention to background factors related to creative behavior.

Su Qtr. 3 cl. Prereq: 100 and an additional 10 cr hrs in psych.

**675 Social Cognition U G 3**

Introduction to the cognitive underpinnings of social behavior.

Wi Qtr. 1 3-hr cl. Prereq: Grad standing in psych or permission of instructor.

**681 Development and Psychopathology U G 5**

Examines theories and research on psychopathology (e.g., autism) during infancy, childhood, and adolescence from a developmental-contextual perspective; emphasis on description, prevalence, etiology, prognosis, and assessment.

Su, Sp Qtrs. 3 cl, 1 hr diagnostic team meeting. Prereq: 100 and 550 or permission of instructor.

**684 Psychology of Delinquency U G 5**

Characterization, risk and protective factors, and treatment; emphasis on current theories and research.

Au Qtr. 2 1.5-hr cl. Prereq: 551 or equiv.

**693 Individual Studies**

Individual reading or research projects by special agreement between instructor and student.

Su, Au, Wi, Sp Qtrs. Prereq: 100, an additional 9 cr hrs in psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions.

**693.01 Clinical Psychology U G 1-15**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.02 Counseling Psychology U G 1-15**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.03 Developmental Psychology U G 1-15**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.04 Human Experimental Psychology U G 1-15**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.05 Industrial Psychology U G 1-15**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.06 Quantitative Psychology U G 1-15**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.07 Social Psychology U G 1-15**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.08 Psychobiology U G 1-15**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**693.09 Mental Retardation and Developmental Disabilities U G 1-15**

Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**695 Seminars in Psychology**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor; either 219 or 220 or 320, or Stat 145 or 245; and 17 cr hrs of psych course work above the 200 level; or grad standing. No more than 6 cr hrs in any combination of decimal subdivisions may be counted toward the undergrad major.

**695.01 Clinical U G 2-5**

Repeatable.

**695.02 Counseling U G 2-5**

Repeatable.

**695.03 Developmental Psychology U G 2-5**

Repeatable.

**695.04 Human Experimental U G 2-5**

Repeatable.

**695.07 Social U G 2-5**

Repeatable.

**695.08 Psychobiology U G 1-5**

Repeatable.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 100 and written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition and Food Management, Nursing, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children U G 3**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models. Wi Qtr. 1 3-hr cl. Not open to students with credit for 717.01 in any of the cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues U G 3**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su, Sp Qtrs. 1 2-hr cl. Not open to students with credit for 717.02 in any of the cross-listed areas.

**717.03 Developmental Disabilities U G 3**

Focus on the most pertinent scientific and societal issues of developmental disabilities.

Au Qtr. 1 3-hr cl. Not open to students with credit for 717.03 in any of the cross-listed areas.

**720\* Psychology Applied to Sport U G 3**

Psychology applied to sport; focus on the athlete; consideration of special population (women, minorities, and youth); the sport psychologist's role.

Wi Qtr. 2 1.5-hr cl. Prereq: 540 or psych major or grad standing or permission of instructor. Not open to students with credit for 794C Wi Qtr 1984 or 1985.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Sp Qtr. 1 2-hr cl. Prereq: Cptr/Inf 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Linguistics, Philosophy, and Speech and Hearing Science. Repeatable to a maximum of 4 cr hrs.

**H783 Honors Research U 3**

A program of readings, conferences, and reports selected to aid the student in completing a senior honors thesis.

Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Candidate for degree with distinction. Repeatable to a maximum of 9 cr hrs.

**788\* Laboratory in Attitude Measurement U G 3**

Wi Qtr. 1 cl, 4 lab hrs. Prereq: Written permission of instructor.

**789 Survey Research Practicum G 5**

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

Sp Qtr. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in AED Econ, Agr Educ, Bus-Mktg, Econ, Educ P&L, Geog, J Com, Polit Sc, Pub Hlth, PubPol&M, Sociol, or Stat. Cross-listed in AED Econ, Agr Educ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Polit Sc, Pub Hlth, PubPol&M, Sociol, and Stat.

**794 Group Studies U G 1-5**

The topics vary from quarter to quarter and will be announced at least one month in advance.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 15 cr hrs in psych at the 500 level or above and permission of instructor.

**800 Advanced Experimental Laboratory G 3-15**

Advanced training in the experimental and quantitative methods in the several areas of general experimental psychology and comparative psychology.

Au Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**806 Neuropsychology I G 3**

An introduction to the principles governing neural integrative mechanisms; morphology of nervous systems of the vertebrates; transmission in individual neurons; properties of junctions in integrative networks; elementary laws of reflex action.

Au Qtr. 3 cl.

**807 Neuropsychology II G 3**

Functional differentiation of the nervous systems of vertebrates; properties of principle division of the brain; organizations of the forebrain; mechanisms of sleep and waking rhythm; mechanisms of perception.

Wi Qtr. 3 cl. Prereq: 806.

**808 Neuropsychology III G 3**

Neural mechanisms of motivation and behavioral plasticity; control of major cyclical phenomena, including hunger, thirst, and reproduction; reactions to a periodic and continued stresses; mechanisms of the learning process.

Sp Qtr. 3 cl. Prereq: 807.

**809 History and Systems of Psychology G 3**

Development of psychology from the philosophical antecedents to its present status as a science and a profession; assignments in original sources as far as possible.

Au Qtr. 3 cl. Prereq: 16 cr hrs in psych.

**811 Seminar in Experimental Psychology G 2**

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**814\* Psychological Issues in Knowledge Representation G 3**

Psychological approaches to how knowledge is represented by humans, including empirical and architectural constraints, format differences, generalization abilities, and development of representations.

Su, Au Qtrs. 1 2-hr cl, 1 hr arr.

**815\* Decision Processes G 4**

Introductory course in the application of statistical decision theory as a normative model and analytic technique in the experimental study of cognitive processes.

Wi Qtr. 4 cl. Prereq: Grad standing in psych, undergrad inferential statistics strongly recommended.

**816\* Human Performance Theory G 4**

Research and theory on the discrete and on the continuous cases of human information processing; topics include input processes, central processing functions, and output processes.

Wi Qtr. 3 cl. Prereq: 620 or written permission of instructor.

**818 Current Frameworks in Industrial and Organizational Psychology****818.01 Advanced Personnel Psychology G 4**

Content and methodology of personnel psychology, including such topics as job analysis, interviewing, test validation, selection and placement systems, performance appraisal, and training.

Au Qtr. 2 2-hr cl. Not open to students with credit for 621.

**818.02 Motivation and Attitudes in Work Organizations G 4**

Courses and consequences of attitudes and motivation in organizations, with emphasis on theory and research.

Wi Qtr. 2 2-hr cl. Not open to students with credit for 623.

**818.03 Psychology of Organizational Effectiveness G 4**

Effects of organizations and groups on individual behavior, including interpersonal processes (groups, leadership), structural effects (task, technology, reward systems) and organizational conflict and change.

Sp Qtr. 2 2-hr cl. Not open to students with credit for 622.

**819 Seminars in Industrial and Organizational Psychology G 3**

Au, Wi, Sp Qtrs. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

A— Psychology of Individual Effectiveness

B— Psychology of Organizational Effectiveness

C— Human Motivation

D— Theoretical Developments and Issues

E— Current Practices and Trends

**820 Fundamentals of Factor Analysis G 4**

Basic Common Factor Model and its application in psychology; model, communality estimation, factor extraction, orthogonal and oblique rotation, factor scores, confirmatory factor analysis use of computer programs.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**821 Seminar in Field and Experimental Research Methods G 3**

Logic of the research process, uses and limitations of major research strategies, and application of specific data gathering techniques with special emphasis on field settings.

Au, Wi Qtrs. 3 cl. Prereq: Permission of instructor, and 821A for 821B, and 821B for 821C. Repeatable to a maximum of 9 cr hrs.

**824 Seminars in Psychological Measurement G 2-4**

Repeatable to a maximum of 10 cr hrs.

- A— Models for Psychophysics
- B— Models for Measurement and Scaling
- C— Models for Interpersonal Analysis

**826 Statistics in Psychology G 4**

Basic concepts of descriptive and inferential statistics; includes estimation, hypothesis testing, and introductory treatment of analysis of variance, correlation and regression, and non-parametric techniques.

Au Qtr. 2 1.5-hr cl, 2 lab hrs. Prereq: 320, or Stat 145, or equiv and grad standing in psych, or permission of instructor.

**828 Correlational Analysis G 4**

Correlation and regression techniques for quantitative and qualitative data analysis; simple linear regression and correlation, multiple linear regression, nominal scales, interactions; other related multivariate methods; use of computer programs.

Sp Qtr. 2 1.5-hr cl, 2 lab hrs. Prereq: 827 or equiv.

**830 Covariance Structure Models G 4**

Theory and methods of testing models of covariance structures; general mathematical model, identification, parameter estimation, goodness of fit, model modification, and the use of computer programs such as LISREL.

Wi Qtr. 2 2-hr cl. Prereq: 820 and 828, or permission of instructor.

**831 Seminars in Psychological Statistics G 1-5**

1-5 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 40 cr hrs.

- A— Analysis of Variance
- B— Experimental Design
- C— Factor Analysis
- D— Mathematical Models and Theory
- E— Non-Parametric Statistics. Au Qtr.
- F— Quasi-Experimental Design
- G— Advanced Multivariate Analysis
- I— Current Practices and Trends. Au, Wi Qtrs.
- J— Computer Simulation Research
- K— Special Topics

**832 Sociomoral Development G 4**

Focus upon recent work stemming from Piagetian and Eriksonian approaches; relation of specific theoretical perspectives to current issues and findings emphasized.

Au, Sp Qtrs. 2 1.5-hr cl.

**834 Psychology of Infancy G 3**

Psychological development during the first four years of life with particular reference to neonatal period and research methodology in studies involving infants.

Wi Qtr. 1 2.5-hr cl. Prereq: 837 or permission of instructor.

**835 Child Development G 3**

Major developmental aspects of childhood; review of theory, methodology, research studies, and historical and contemporary writing about children; consideration of interdisciplinary approaches.

Wi Qtr. 3 cl. Prereq: 837 or permission of instructor.

**836 Developmental Psychology****836.01 Adolescence G 3**

Comprehensive view of adolescence as a stage in human development; theory, methodology, research and application to family, school and community; relation to other developmental stages.

Wi Qtr. Prereq: 826, 835 or equiv, and permission of instructor.

**836.02 Maturity and Aging G 3**

Survey of psychology of adulthood; normative episodes, problems of stress, adaptation, social interaction and physical and intellectual functioning; maturity in modern and historical cultures.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**840 Practicum in Developmental Psychology G 3-9**

Observation of children in a representative variety of clinical settings with particular reference to developmental phenomena of growth and behavior; application of research, diagnostic and intervention methodology.

Su, Au, Wi, Sp Qtrs. 1 cl, lab hrs. Prereq: 837, 2nd yr grad standing in psych, and permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**842 Seminar in Developmental Psychology G 3**

2 cl. Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

- A— Current Theoretical Issues
- B— Development of Dimensions of Cognitive Differences
- C— Development of Social Cognition
- D— Cultural Influences on Human Development: Ethnic Minority Children and Adolescence
- E— Social Development during Adolescence
- F— Development of Creative Behavior
- G— Deviant Behavior in Childhood and Adolescence
- I— Aging and Senescence
- J— The Development of the Self Concept
- K— Cognitive Development: Issues in Cognitive Development
- L— Development of Language: Deafness and Communication Disorders

**843 Theories of Human Development**

Comparative presentation of significant major historical and modern developmental theories with specific evaluation of their relevance in the formulation of a comprehensive psychological theory.

3 cl. Prereq: 837 and 2nd yr grad standing.

**843.01 Analytic and Social Learning Theory G 3**

Wi Qtr.

**843.02 Cognitive, Organic, and Structural Theories G 3**

Sp Qtr.

**844 Psychopathology of Childhood**

A study of psychopathological conditions of childhood, such as autism, schizophrenia, neurosis, acting out, and behavior problems from a developmental point of view.

3 cl. Prereq: Permission of instructor.

**844.01 Concepts G 3**

Sp Qtr. 3 cl.

**844.02<sup>A</sup> Disturbances G 3****851 Seminar on the Teaching of Psychology G 3**

Designed for first-time teachers of psychology; theory, philosophy, ethics, research, course planning and delivery, and practical strategies to promote teaching excellence.

Su Qtr. 2 2-hr cl. Prereq: Grad standing in psych.

**852 Practicum on the Teaching of Psychology G 4**

Lecture preparation, micro-teaching and other practice, assessment and feedback, organization of effective discussions and use of electronic media.

Su Qtr. 2 2-hr cl. Prereq: Grad standing in psych.

**854 Issues in Adult Psychopathology G 4**

To survey the phenomena of psychopathology in adults and become familiar with the present diagnostic system used by the majority of mental health professionals.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**856 Child Behavior Assessment and Therapy G 3**

Assessment and treatment approaches for child behavior.

Sp Qtr. 2 1.5-hr cl. Prereq: Permission of instructor.

**859 Seminars in the Psychology of Exceptional Children and Adults G 3**

Advanced topics in research strategies and methodology; specialized topics on the growing edge of the psychology of exceptional children and adults.

Wi Qtr. 2 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**860 Theories of Personality G 3**

A critical consideration of the theories of personality structure psychology.

Sp Qtr. 3 cl. Prereq: Advanced work in personality and social psych and permission of instructor.

**861 Research Design and Methods in Clinical Psychology G 3**

Introduction to the theory and use of clinical methods in psychology, designed for first-year graduate students in clinical psychology.

Au Qtr. 3 cl. Prereq: Permission of instructor. Open only to clinical psych grad students. Repeatable to a maximum of 6 cr hrs.

**864 Psychological Appraisal**

Concepts and procedures for appraising human behavior.

Prereq: Permission of instructor. Courses (except 864.01) ordinarily involve both classroom and practicum experiences.

**864.01 Lecture G 3**

Theories and methods of psychological appraisal; integration of different theories and approaches.

Au Qtr. 3 cl.

**864.06\* Special Topics G 1-4**

Su Qtr. 1-4 cl, and/or 2-8 lab hrs. Repeatable to a maximum of 8 cr hrs.

**866 Interventions with Individuals**

Concepts and practices of various interventions into the troubled behavior of individuals.

1-5 cl and/or 2-10 lab hrs. Prereq: Permission of instructor. Courses ordinarily involve both classroom and practicum experience.

**866.02 Behavior Modification G 1-5**

Au Qtr. Repeatable to a maximum of 15 cr hrs.

**866.04\* Novel and Experimental Approaches G 1-5**

Repeatable to a maximum of 15 cr hrs.

**868 Systematic Theory in Social Psychology G 3**

Survey of major classic and contemporary theories in social psychology and discussion of the role of theory in scientific endeavor.

Au Qtr. Prereq: Permission of instructor. Not open to students with credit for this topic under 873.

**869 Research Methodology G 2**

Discussion of conceptual and methodological issues related to the ongoing work of graduate students and faculty.

Wi, Sp Qtrs. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.

**870 Advanced Social Psychology G 3**

Survey of research and theory in experimental social psychology; covers attitudes, social cognition, group processes, and related topics.

Au Qtr. 3 cl. Prereq: Grad standing in psych or permission of instructor.

**872 Social Psychology Laboratory G 3**

Advanced training in methods and data collection in the areas of social psychology, laboratory, and field experience.

Au, Wi, Sp Qtrs. 2 cl, 1 lab hr. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs.

**873 Seminar in Social Psychology G 3,5**

Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. Most subdivisions offered every other year.

A— Contemporary Attitude Theory and Research

B— Social Behavior and Personality

C— Attribution Theory Research

D— Social Cognition

E— Current Research Trends. Au, Sp Qtrs.

F— Group Processes

G— The Self

**874 Brain and Cognition G 4**

Cognitive processes in perception, attention, memory, and language are examined from information processing and neuropsychological perspectives; emphasizes how cognition arises in the brain.

Sp Qtr. 2 2-hr cl. Prereq: 20 cr hrs in psych or permission of instructor.

**875 Practicum in Social Psychology**

Survey and supervised experience in using the technique and research designs of social psychology.

2 cl, 2 lab hrs. Prereq: Permission of instructor.

**875.01 Practicum in Social Psychology I G 3**

Au Qtr. Repeatable to a maximum of 18 cr hrs.

**875.02 Practicum in Social Psychology II G 3**

Wi Qtr. Repeatable to a maximum of 18 cr hrs.

**875.03 Practicum in Social Psychology III G 3**

Sp Qtr. Repeatable to a maximum of 18 cr hrs.

**876 Research Methods in Social Psychology**

Laboratory research, field research, research writing, and criticism.

3 cl. Prereq: Permission of instructor.

**876.01\* Research Methods in Social Psychology I G 3**

Introduction to methods in experimental social psychology; focus on laboratory-based procedures and on problems and issues of scientific inference.

Au Qtr.

**876.02\* Research Methods in Social Psychology II G 3**

Introduction to quasi-experimental methods; focus on problems and issues in conducting non-laboratory and field research.

Wi Qtr.

**876.03 Research Methods in Social Psychology III G 3**

Introduction to research writing and critique; focus on preparation of reviews of theoretical and empirical papers.

Sp Qtr.

**877 Human Learning I: Learning G 4**

Introductory survey of the theoretical and empirical issues in human learning; emphasis on the analysis of learning tasks and the conditions under which learning occurs.

Au Qtr. 2 2-hr cl.

**878 Human Learning II: Memory G 4**

Theoretical issues and experimental research on the topic of human memory.

Wi Qtr. 2 2-hr cl.

**879 Human Learning III: Cognitive Processes G 4**

Theoretical and experimental research in several areas of cognition including concept learning, problem solving, and reasoning.

Sp Qtr. 2 1.5-hr cl. At least 10 cr hrs of undergrad psych course work.

**880 Complex Information Processing in Cognition G 3**

A study of high-level cognition from the perspectives of behavior, brain, and computation.

Sp Qtr. 2 1.5-hr cl. Prereq: Grad standing.

**881\* Social Ecology: Implications for Counseling G 4**

Advanced graduate students relate person-environment interaction theory to practice in counseling, educational, and community settings.

Sp Qtr. 2 cl. Prereq: Written permission of instructor.

**882 Psychology of Counseling****882.01 Lecture G 3**

Theoretical, research, cultural and professional bases for counseling; fundamentals of interviewing; counseling procedures and techniques.

Au Qtr. 3 cl. Prereq: 13 cr hrs in psych.

**882.02 Laboratory G 2**

A series of practical exercises designed to apply the principles of the psychology of counseling.

Au Qtr. 4 lab hrs. Prereq: Permission of instructor.

**883 Counseling Diagnostics****883.01 Lecture G 3**

Theory and application of interview data, observed behavior, test results, and biographical information as a basis for diagnostics in counseling and evaluation.

Wi Qtr. 3 cl. Prereq: 13 cr hrs in psych.

**883.02 Laboratory G 2**

Survey of specific diagnostic techniques and tests and application through role playing.

Wi, Sp Qtrs. 4 lab hrs. Prereq: Permission of instructor. This course is graded S/U.

**884 Psychology of Career Development****884.01 Lecture G 4**

A survey and critical analysis of literature and research regarding work, work adjustment, career choice and development, vocational exploration, and variables associated with career development.

Sp Qtr. 2 2-hr cl.

**884.02 Laboratory G 2**

A series of practical exercises designed to apply the principles of the psychology of career development.

Sp Qtr. 1 2-hr lab. Prereq: 882 or equiv and written permission of instructor.

**885 Beginning Practicum in Counseling G 4**

Supervised practice in assisting college students in their adjustment to college; emphasis on diagnosis and treatment; special help given to interviewing procedures.

Su, Au, Wi, Sp Qtrs. 2 cl, 8-10 lab hrs. Prereq: 883 and written permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**886 Advanced Practicum in Counseling G 4**

Supervised practice in assisting college students and adults with problems of personality adjustments or supervising techniques through observation and discussion of work with other counselors.

Su, Au, Wi, Sp Qtrs. 2 cl, 8-10 lab hrs. Prereq: 885 and written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.



**887 Seminar in Counseling Psychology G 3**

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

A— Counseling Older Adults

B— Behavioral Therapy

C— Tests and Assessment in Counseling

E— Ethics and Professional Issues

F— Cognitive Approaches to Counseling

G— Counseling Women

I— Psychodynamic Theories of Counseling

J— Psychological Assessment in a VA Hospital setting

K— Research in Study Skills

L— Forensic Application of Psychological Assessment

M— Existential and Phenomenological Approaches to Counseling

N— Advanced Assessment and Professional Practice in Neuropsychology

P— Social Influence Process in Counseling Psychology

R— Marriage and Family

T— Cross Cultural Counseling and Psychotherapy

U— Counseling Supervision

W— Personality and Ability

Y— Adult Career Development Problems

Z— Special Topics

**888<sup>A</sup> Psychological Study of Individuals and Groups G 3**

Basic concepts and techniques of student personnel work.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**889 Practicum in Clinical Psychology G 1-30**

Supervised practice in psychological assessment and intervention in the department's psychoeducational clinic.

Su, Au, Wi, Sp Qtrs. 1-2 client contact hrs; 1-2 supervision hrs. Prereq: Permission of instructor. Open only to students in clinical psychology. Repeatable to a maximum of 30 cr hrs.

**892 Workshop G 1-15**

Intensive study of an area or problem in psychology.

Arr. Prereq: Vary with topic offered Repeatable to a maximum of 15 cr hrs.

A— 4 wk Summer Institute in Political Psychology: Theory. 5 cr hrs. Not open to students with credit for this topic under Polit Sc 892. Cross-listed in Political Science.

B— 4 wk Summer Institute in Political Psychology: Methods. 5 cr hrs. Not open to students with credit for this topic under Polit Sc 892. Cross-listed in Political Science.

**912 Behavioral Pharmacology G 3**

Introduction to the foundations of behavioral pharmacology; integration of human clinical and animal experimental psychopharmacological research.

Wi Qtr. 1 3-hr cl. Prereq: 501 and 502, or permission of instructor.

**913 Cognitive Neuroscience G 3**

Neuronal mechanisms of information processing.

Sp Qtr. 1 3-hr cl. Prereq: 806 and 807, or permission of instructor.

**980 Supervised Field Experience in Psychology G 1-15**

Supervised experience, either research or operational, in any agency doing professional psychological work such as a school system, a psychological clinic, an industrial personnel department, or a counseling center.

Su, Au, Wi, Sp Qtrs. Prereq: Psych 2nd yr standing and approval of local staff of area in which student is specializing. Supervised by member of local staff and some member of the outside agency approved by the Dept of Psychology. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**990 Internship in Psychology G 1-15**

Full-time supervised training in an approved predoctoral internship agency; supervision and directed experiences coordinated by student's adviser, program training director, and internship training director.

Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: PhD candidacy, an approved dissertation proposal, and written permission of adviser. Limited to PhD candidates in counseling and clinical psych. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

**999 Research in Psychology G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Public Health**

M-120 Starling-Loving Hall, 320 West 10th Avenue, 293-3907

**665 Field Experience in Comprehensive Health Planning P G 6-12,18**

Full-time assignment to a state or local health planning agency, to work on a specific project in community health under the guidance of a selected faculty adviser.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Field time assigned for medical students 1, 2, or 3 months and grad students 1/2 or entire summer quarter.

**741 Public Health Organization G 4**

History and development of public health agencies; structure and functions of governmental, voluntary, and proprietary health organizations.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in public health or permission of instructor. Not open to students with credit for 812. Field report required.

**751 Principles and Applications of Epidemiology and Associated Statistical Methods I P G 3**

Population medicine: distribution and determinants of health and disease, screening for detection of disease, observation and analytic studies, and control of infectious disease.

Au Qtr. Prereq: Enrollment in MPH program or permission of instructor.

**752 Principles and Applications of Epidemiology and Associated Statistical Methods II P G 3**

Statistical methods in epidemiologic studies, mortality and morbidity, investigations of outbreaks of disease, design in public health, and clinical and community trials.

Wi Qtr. 10 hrs on 3 3-day wks. Prereq: Enrollment in MPH program or permission of instructor.

**753 Principles and Applications of Epidemiology and Associated Statistical Methods III P G 3**

Continuation of statistical methods relevant to epidemiology and public health, non-parametric methods, multivariate methods, and critical analyses of selected papers.

Sp Qtr. 10 hrs on 3 3-day weekends. Prereq: Enrollment in MPH program or permission of instructor.

**754 History of Public Health P G 3**

Development of public health services in the United States; social, economic, and cultural influences; historical background of current responses to perceived health needs.

Su Qtr. Prereq: Enrollment in MPH program or permission of instructor.

**789 Survey Research Practicum G 5**

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

Sp Qtr. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in AED Econ, Agr Educ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Polit Sc, Psych, PubPol&M, Sociol, or Stat. Cross-listed in AED Econ, Agr Educ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Polit Sc, Psych, PubPol&M, Sociol, or Stat.

**793 Individual Studies in Public Health P G 2-6,12,18**

Su, Au, Wi, Sp Qtrs. 1, 2, 3, or 4 months; offered all months except June. Prereq: Grad standing in public health or permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**794 Group Studies in Public Health P G 2-6,12,18**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. 1, 2, 3, or 4 months; offered all months except June (prof cr).

**813 Planning for Public Health Promotion and Disease Prevention P G 3**

Historical, philosophical, scientific, and empirical bases for planning and implementing public health promotion and disease prevention program with illustrations involving community residents, employees, and minorities.

Au Qtr. 20 hrs on each of five consecutive 3-day weekends. Prereq: Admission to the MPH program or two yrs of experience in the health field.

**814 Programs of Health Promotion and Disease Prevention P G 3**

Theory and practice of preventive programs in personal health and environmental health, national strategies of disease prevention, and prospects for the improvement of health in the United States.

Au Qtr. Prereq: Enrollment in MPH program or permission of instructor.

**850 Seminar in Public Health G 1-3**

Au, Wi, Sp Qtrs. Prereq: Grad standing in public health or permission of instructor. Repeatable to a maximum of 8 cr hrs.

**999 Research in Public Health G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in pub hlth or permission of instructor. Repeatable. This course is graded S/U.

**Public Health: Biometrics**

M-120 Starling-Loving Hall, 320 West 10th Avenue, 293-3907

**G000^ General U P G 1-25**

Su, Au, Wi, Sp Qtrs. Repeatable.

**S000^ Special U P G 1-25**

Su, Au, Wi, Sp Qtrs. Repeatable.

**701 Design and Analysis of Comparative Biomedical Research I G 4**

Theory and application of basic statistical concepts as they affect design of biomedical research, integrated with application of computer statistical packages.

Wi Qtr. 2 1.5-hr cl and 2 1-hr labs. Prereq: Grad standing in pub hlth or permission of instructor. Not open to students with cr for 764 or Vet Prev 764 or Vet Phys 764. Cross-listed in Veterinary Preventive Medicine and Veterinary Physiology and Pharmacology.

**702 Biostatistics and Computers in Medical Research G 4**

Review of the fundamental concepts of biostatistics, including more complex analysis of variance designs, integrated with application of computer statistical packages.

Sp Qtr. 2 1.5-hr cl and 2 1-hr labs. Prereq: 701, grad standing in pub hlth or permission of instructor. Not open to students with credit for 765 or Vet Prev 765. Cross-listed in Veterinary Preventive Medicine.

**703 A Problem-Oriented Approach to Biostatistics G 4**

The employment of actual health-related problems to illustrate the use of computers and applied statistical methods important to epidemiologists and other health professionals.

Au Qtr. 2 2-hr cl. Prereq: 701, and 702 or permission of instructor. Not open to students with credit for 766.

**705 Health Survey Methods G 4**

An introduction to health survey methods; lectures, readings, classroom, and community exercises; consideration of health planning and epidemiological applications.

Au Qtr. 2 2-hr cl and 1 1-hr conf. Prereq: Grad standing in pub hlth or permission of instructor. Not open to students with credit for 770.

**766 Biometrics Laboratory P G 3**

Participation in consultations offered to biomedical researchers, combined with individualized faculty guidance.

Au, Wi, Sp Qtrs. 2 1-hr lab and 2 1-hr conf. Prereq: Grad standing in pub hlth or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**793 Individual Studies in Biometrics P G 2-6,12,18**

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**794 Group Studies in Biometrics P G 2-5,6,12,18**

Repeatable to a maximum of 24 cr hrs.

**Public Health: Environmental Health Sciences**

M-120 Starling-Loving Hall, 320 West 10th Avenue, 293-3907

**G000^ General U P G 1-25**

Repeatable.

**S000^ Special U P G 1-25**

Repeatable.

**731 Principles of Environmental Health G 4**

Survey of major environmental factors affecting human health, including air, water, and land pollution, occupational hazards, trace metals, chemical carcinogens, radiation, and noise.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in pub hlth or permission of instructor. Not open to students with credit for 731.

**793 Individual Studies in Environmental Health Sciences P G 2-5,6,12,18**

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**794 Group Studies in Environmental Health Sciences P G 2-5,6,12,18**

Repeatable to a maximum of 24 cr hrs.

**Public Health: Epidemiology**

M-120 Starling-Loving Hall, 320 West 10th Avenue, 293-3907

**G000^ General U P G 1-25**

Repeatable.

**S000^ Special U P G 1-25**

Repeatable.

**711 Epidemiology I G 4**

Principles of epidemiology with special emphasis on methods employed in current epidemiologic studies.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in pub hlth or permission of instructor. Not open to students with credit for 800.

**712 Epidemiology II G 4**

Design of epidemiologic studies of major health problems; review of key studies; application of epidemiologic data to public health programs and medical care delivery.

Sp Qtr. 2 2-hr cl. Prereq: 711, grad standing in pub hlth or permission of instructor. Not open to students with credit for 801.

**713 Epidemiology in Environmental Health G 4**

Principles and application of epidemiologic methods in the investigation and control of health problems stemming from environmental hazards.

Sp Qtr. 2 2-hr cl. Prereq: 711 and 712, or grad standing in pub hlth or permission of instructor. Not open to students with credit for 802.

**750 Principles of Epidemiology P G 3**

Introduction to the nature and scope of epidemiology; survey of basic epidemiological methods and their application to selected acute and chronic health problems.

Au Qtr. 2 1.5-hr cl. Prereq: Grad or professional standing. Not open to students with credit for 800 or 851.

**793 Individual Studies in Epidemiology P G 2-5,6,12,18**

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**794 Group Studies in Epidemiology P G 2-5,6,12,18**

Repeatable to a maximum of 24 cr hrs.

**803 Health Data: Sources and Uses P G 3**

Study of compilation of health and health-related data and their utilization; local, state, regional, and national surveys; and life tables and community health indices.

Sp Qtr. Prereq: Enrollment in MPH program or permission of instructor.

**890 Clinical Approaches to Prevention P G 3**

Study of application and evaluation of the methods of community health to practice of clinical medicine and other interventions at the level of the individual.

Au, Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: Grad standing in pub hlth or permission of instructor.

**Public Health: Health Behavior and Health Promotion**

M-120 Starling-Loving Hall, 320 West 10th Avenue, 293-3907

**G000^ General U P G 1-25**

Repeatable.

**S000^ Special U P G 1-25**

Repeatable.

**743 Preventing Disease and Promoting Health Through the Application of Behavioral and Social Science Concepts G 4**

Examination of behavioral and social science concepts as the basis for public health practice; topics include transferring knowledge, motivating and aiding behavior change efforts, and working with the community.

Wi Qtr. 2 2-hr cl.

**747 Advanced Addictions Studies G 3**

Current issues in pharmacology, epidemiology, public policy, prevention, diagnosis and treatment of alcohol and other drug addictions.

Wi Qtr. 2 1.5-hr cl. Prereq: Grad standing in pub hlth or permission of instructor.

**758 Program Evaluation in Public Health G 3**

Examination of evaluation models for public health programs; exploration of philosophical and scientific issues in evaluation; and skill-building in both qualitative and quantitative evaluation methods.

Wi Qtr. 10 hrs on 3 3-day wkends. Prereq: Enrollment in the MPH program or permission of instructor.

**761 Behavioral Epidemiology G 4**

A review of the epidemiological literature that examines the relationship between behavioral factors, theories of stress, and disease processes.  
 Au Qtr. 2-2-hr cl. Prereq: Grad standing in pub hlth or permission of instructor.  
 Not open to students with credit for 853.

**793 Individual Studies in Health Behavior and Health Promotion P G 2-5,6,12,18**

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**794 Group Studies in Health Behavior and Health Promotion P G 2-5,6,12,18**

Repeatable to a maximum of 24 cr hrs.

**885 Behavioral Responses in Disease Prevention G 3**

A survey of behavioral science literature concerning health behavior, illness behavior, and sick-role and their impact upon programs for prevention, early detection, and amelioration of disease.

Sp Qtr. 2 1.5-hr cl. Prereq: Grad standing in pub hlth or permission of instructor.

## Public Policy and Management

300 Fisher Hall, 2100 Neil Avenue, 292-8696

**522 Introduction to Public Policy Analysis U 5**

Introduction to analytical techniques employed at policy formulation, implementation, and evaluation stages of public policy analysis process, strengths and weaknesses of techniques; research strategies development.  
 Su, Su Term 1 Qtr. 2-2-hr cl.

**594 Group Studies U 1-5**

Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered.

Repeatable to a maximum of 15 cr hrs.

**631 Federal Finance and Fiscal Policy U G 3**

The economics of government spending and taxation; analysis of the fiscal role and instruments and their effects on the economy.

1 2.5-hr cl. Prereq: Econ 530 or equiv. Not open to students with credit for 630 or Econ 631. Cross-listed in Economics.

**633 State and Local Government Finance U G 3**

Economic analysis of revenues and expenditures of state and local governments; vertical and horizontal relationships between agencies and units; specific problems in these areas.

1 2.5-hr cl. Prereq: Econ 530 or equiv. Not open to students with credit for Econ 633. Cross-listed in Economics.

**730 Public Finance U G 5**

Comprehensive survey and analysis of the principle fiscal activities of contemporary governments; logic of public sector activity, taxation principles and practice, intergovernmental relations, and current fiscal problems.

Wi Qtr. 2-2-hr cl. Prereq: 830 or Econ 501A and grad standing, or permission of instructor. Not open to students with credit for Econ 530 or Econ 730. Cross-listed in Economics.

**795<sup>+</sup> Public Policy: The Business-Government Relationship U G 4**

Business tools and strategy for influencing government; evolution and direction of public policy toward business.

2 2-hr cl. Prereq: Sr standing or permission of instructor.

**796<sup>+</sup> Managing in the Political Environment U 4**

Introduction to public policy process and stakeholder approaches to issue management; strategic options and policy tools (political action committees, advocacy, and image advertising), state policy incentives, and international relations.

2 2-hr cl. Prereq: Sr standing or permission of instructor.

**797<sup>+</sup> Interdepartmental Seminar U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Repeatable by permission.

**H797<sup>+</sup> Public Policy: The Business-Government Relationship U G 4**

Business tools and strategy for influencing government; evolution and direction of public policy toward business.

2 2-hr cl. Prereq: Sr standing or permission of instructor.

**801 Public Policy Formulation and Administration G 5**

Analysis of the operating environment of the public administrator; public policy processes, public organization behavior, and policy formulation in the U.S. federal system.

Au Qtr. 2 2-hr cl. Prereq: Polit Sc 300 or equiv.

**802 Legal Environment of Public Administration G 3**

An examination and analysis of the constraints imposed upon public administrative processes by the legal environment including judicial policy-making and the evolving legal order.

Sp Qtr. 2 1.5-hr cl.

**803<sup>+</sup> Public Policy Implementation G 4**

Policy implementation process in a political setting emphasizing planned changes; organizational design, systems analytic program management and evaluation; conflict management within a public bureaucracy.

2 2-hr cl. Prereq: 801.

**804 Concepts and Methods of Program Evaluation G 3**

Provides an understanding of the conceptual, methodological, bureaucratic, political, and organizational issues surrounding evaluation research.

Wi Qtr. 2 2.5-hr cl. Prereq: 801.

**808 Policy Problem Seminar I G 3**

Multidisciplinary seminar integrated with field experience in the solution of actual public administrative and policy problems; organized around problem areas.

Su, Au, Wi, Sp Qtrs. Prereq: 730, 801, 802, 804, 810, 811, 820, 821, 822, 830, 834 or permission of instructor. This is a Progress course. 2-qtr sequence with 809. Final grade assigned for both 808 and 809 at completion of 809.

**809 Policy Problem Seminar II G 3**

Continuation of 808.

Su, Au, Wi, Sp Qtrs. Prereq: 808. This is a Progress course. Offered in a series with 808.

**810 Strategic Management G 3**

The conducting of a strategic assessment of an agency; identifying strengths, weaknesses, opportunities, and threats; and with development of accompanying management strategy.

Sp Qtr. 2 2-hr cl.

**811 Public Management and Human Relations G 4**

Development of management skills essential for beginning and mid-level managers and supervisors in public sector agencies.

Wi Qtr. 1 3-hr cl.

**820 Problem Formulation and Research Methods in Public Administration G 3**

Introduction to types of problems encountered in public policy and management; problem formulation and basic research methods tools required to tackle them.

Wi Qtr. 2 2-hr cl. Prereq: A course in statistics.

**821 Governmental Information Systems Administration G 3**

Critical study of the administration and design of management information systems for public agencies; selected case studies.

Au Qtr. 2 2-hr cl.

**822 Data Analysis in Public Administration G 3**

Multivariate model building using theoretical and exploratory data analysis perspectives for use in public sector decision support systems; public sector case studies.

Sp Qtr. 2 2-hr cl.

**823<sup>+</sup> Systems Analysis for Public Policy Decisions G 3**

Studies in the application of systems analysis to administrative and policy problems in the public sector; selected case studies and problems.

2 2-hr cl.

**830 Economics of Public Policy and Management G 4**

Economic analysis applied to problems of public policy selection and government management operations; efficiency criteria, market failure, and public choice applied to administrative decision-making.

Au Qtr. 2 2-hr cl. Prereq: Econ 200 or equiv.

**834 Public Budgeting and Spending Decisions G 3**

Budgeting as analysis of resource allocation, planning evaluation, and control; tools of analysis for program budgeting and measurement of program results; case studies.

Sp Qtr. 2 1.5-hr cl. Prereq: Econ 730 or equiv.

**835<sup>+</sup> Seminar in Fiscal Administration G 3**

Current professional practices and issues in public sector fiscal administration, including budget and expenditure administration, revenue administration, financial management, and borrowing and debt management.

1 2-hr cl. Prereq: 834.

**836<sup>+</sup> Financial Management G 3**

Exploration of capital programming and budgeting, debt management, and other aspects of major urban capital developments.

1 2.5-hr cl. Prereq: Econ 730.

**837^ Grants Policy and Administration G 4**

Investigation of grant-related policy issues, the distributional impact of grant policy, and how federal grants may have influenced city-suburban hardship disparities.

1 3-hr cl. Prereq: 730. Not open to students with credit for 880B02.

**840^ Criminal Justice Policy and Management G 3**

Provides an overview of the criminal justice system with a focus on structural, organizational, and micro-level aspects of the criminal justice process.

1 2.5-hr cl. Not open to students with credit for 880A01.

**841^ Juvenile Justice System G 3**

Similarities and differences in juvenile and criminal justice processes are discussed, and major policy and management issues in the administration of juvenile justice are explored.

1 2.5-hr cl.

**850 The Political Economy of Administrative Regulation G 3**

Development of an understanding of the origin, intent, and technical elements of administrative regulation with special reference to economic and social regulation.

Au Qtr. 1 2-hr cl.

**851 Current Issues, Practices, and Concepts in Administrative Commission Regulation G 3**

Focus on the economic regulation of transport, power, and communications, and the social regulation of business in the form of environmental and safety standards.

Wi Qtr. 1 2-hr cl.

**852 Governmental and Not-for-Profit Accounting G 3**

The application of accounting principles to governments and other not-for-profit entities; problems relating to funds, appropriations, and budgetary controls.

Au Qtr. 2 1.5-hr cl. Prereq: Acctg 711 or equiv or permission of instructor. Not open to students with credit for Acct&MIS 852. Cross-listed in Accounting and Management Information Systems.

**870^ Urban Policy and Management I G 3**

Management processes affecting city growth or decline, and issues facing those involved in the administration of an urban area.

2 1.5-hr cl.

**871^ Urban Policy and Management II G 3**

Introduction to the field of economic development, emphasizing the role of public management.

2 1.5-hr cl. Prereq: 870.

**880 Seminar on Advanced Problems in Public Policy and Management**

Special studies of selected problems which may include readings, case studies, internships, field investigations, simulation, system analysis, role playing, team teaching, and other experimental techniques.

Su, Au, Wi, Sp Qtrs.

**880.02 Fiscal Policy and Management G 1-6**

Repeatable.

**880.04 Human Resources Policy and Management G 1-6**

Repeatable.

**880.05 Management Information Systems' Administration G 1-6**

Repeatable.

**880.06 Public Policy and Management G 1-6**

Repeatable.

**880.07 Regulation Policy and Management G 1-6**

Repeatable.

**880.08 Urban Policy and Management G 1-6**

Repeatable.

**890 Research Methods in Public Administration G 3**

Logic of inquiry for public policy and management.

Wi Qtr.

**893 Individual Studies G 1-6**

Advanced individual studies in public policy and management.

Prereq: Grad standing in pub pol&mgt and written permission of instructor. Repeatable to a maximum of 15 cr hrs. Including cr hrs in decimal subdivisions. This course is graded S/U.

**894 Group Studies G 1-6**

Advanced group studies in public policy and management.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in decimal subdivisions.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

Au, Wi, Sp Qtrs. Arr. Repeatable. By written permission.

**998 Research in Public Administration: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**999 Research in Public Administration: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

## Radiologic Technology

School of Allied Medical Professions

340 Atwell Hall, 1583 Perry Street, 292-0571

**200 Careers in Radiologic Technology U 1**

Investigation of career opportunities, including roles and responsibilities, education, credentialing requirements, and current and future employment opportunities.

Au Qtr. 1 cl.

**310 Patient Care in Radiography U 2**

Principles of patient care including analysis of ethical and legal issues pertaining to the delivery of radiological services.

Au Qtr. 2 cl. Prereq: Enrollment in Radiologic Technology Division.

**411 Radiographic Procedures I U 4**

Principles of radiography of the chest, bronchial tree, abdomen, urinary systems, alimentary tract, and appendicular skeleton, with application in the laboratory.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Permission of instructor and enrollment in rad tech; concur: 440.

**412 Radiographic Procedures II U 4**

Principles of radiography of the vertebral column, spinal canal, bony thorax, cerebral and visceral cranium, mammary glands, and reproductive systems.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 411.

**425 Principles of Radiologic Imaging I U 3**

Investigation of the principles of radiation protection and radiologic imaging; including accessory equipment used in radiology departments.

Au Qtr. 3 cl. Prereq: Enrollment in rad tech.

**426 Principles of Radiologic Imaging II U 4**

Evaluation of image quality, including sensitometry, processor monitoring, and accessory devices.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 425.

**440 Applied Radiologic Technology I U 1-6**

Clinical application of diagnostic imaging and therapeutic procedures performed in radiology.

Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in rad tech. Repeatable to a maximum of 18 cr hrs. A minimum of 17 cr hrs must be completed.

**471 Radiologic Physics I U 3**

An analysis of the production of X-rays including X-ray circuitry.

Sp Qtr. 3 cl. Prereq: Enrollment in rad tech.

**530 Advanced Radiographic Exposure U 4**

Investigation of technique exposure systems, image receptor technology, imaging equipment, and quality control as a means for controlling radiographic exposure.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 425.

**540 Applied Radiologic Technology II U 1-6**

Continuation of 440 emphasizing the more complex diagnostic and therapeutic procedures.

Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in rad tech and completion of 17 cr hrs of 440. Repeatable to a maximum of 24 cr hrs. A minimum of 22 cr hrs must be completed.

**550 Practica**

Theory and experience in selected radiology specialties.

**Prereq:** Enrollment in rad tech or permission of instructor. 4 cr hrs required of rad tech majors.

**550.41 Cardiovascular and Interventional Radiologic Procedures U 2**

Theory and clinical education in diagnostic and therapeutic radiologic procedures.

Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Repeatable to a maximum of 8 cr hrs.

**550.42 Computed Tomography U 2**

Supervised clinical education and instruction in the theory and operation of CT units in different health care facilities.

Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Repeatable to a maximum of 8 cr hrs.

**550.60 Magnetic Resonance Technology U 2**

Instruction and experience in the performance and interpretation of magnetic resonance.

Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Repeatable to a maximum of 8 cr hrs.

**550.65 Mammography U 2**

Supervised clinical education and instruction in mammography, including the psychological aspects, anatomy, pathology, imaging procedures, and evaluation of quality images.

Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Repeatable to a maximum of 8 cr hrs.

**550.75 Pediatric Imaging Procedures U 2**

Supervised clinical education and instruction in pediatric imaging, including the psychological needs, pediatric anatomy, and pediatric imaging procedures and techniques.

Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Repeatable to a maximum of 8 cr hrs.

**560 Medical Imaging Modalities U 3**

Investigation of the basic physical principles of medical imaging modalities and radiation oncology.

Sp Qtr. 3 cl. **Prereq:** Enrollment in rad tech.

**565 Administrative Aspects of Radiologic Technology U 2**

Analysis of radiology department management, evaluation of radiographic equipment, federal equipment specifications, accreditation, and licensure.

Sp Qtr. 2 cl. **Prereq:** Enrollment in rad tech.

**571 Applied Diagnostic Medical Sonography U 2**

Instruction and experience in the performance and interpretation of sonographic images.

Su, Au, Wi, Sp Qtrs. 2 cl. **Prereq:** Enrollment in rad tech and permission of instructor. Not open to students with credit for 550.50.

**572 Applied Nuclear Medicine U 2**

Observation and participation in performing static and dynamic examinations requiring the use of radiopharmaceuticals.

Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. **Prereq:** Enrollment in rad tech and permission of instructor. Not open to students with credit for 550.70.

**573 Applied Radiation Oncology U 2**

Clinical observation and participation involving planning for and administering radiation treatment of disease.

Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. **Prereq:** Enrollment in rad tech and permission of instructor. Not open to students with credit for 550.80.

**590 Introduction to Angiography U 2**

Introduction to the basic techniques employed in vascular and interventional procedures; emphasis placed on anatomical structures demonstrated, the equipment, and contrast agents used.

Sp Qtr. 2 cl. **Prereq:** Enrollment in rad tech. Repeatable to a maximum of 9 cr hrs.

**595 Seminar U 1-3**

Conferences, group discussions, and presentations of selected topics.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl. **Prereq:** Enrollment in rad tech. Repeatable to a maximum of 9 cr hrs.

**615 Radiographic Clinical Correlations U P G 3**

Correlations of clinical experience relative to patient's medical history and quality and appropriateness of diagnostic images.

Wi Qtr. 3 cl. **Prereq:** Enrollment in rad tech.

**665 Operation of a Medical Imaging Department U 3**

Methods of delivering radiological services including evaluation of equipment, personnel, budgeting, and the impact of federal equipment regulations.

Sp Qtr. 3 cl. **Prereq:** Enrollment in rad tech. Not open to students with credit for 550.10.

**668 Quality Control in Diagnostic Medical Imaging U 3**

Examination of quality control methods utilized for radiographic CT and MRI imaging including management, implementation, and evaluation aspects.

Wi Qtr. 3 cl. **Prereq:** 530 or permission of instructor. Not open to students with credit for 660.

**670 Radiobiology for the Radiologic Technologist U 3**

Fundamentals of radiobiological principles and radioprotective procedures, including cellular and whole body as it relates to radiologic technology.

Wi Qtr. 3 cl. **Prereq:** Enrollment in rad tech.

**672 Radiologic Sectional Anatomy U 3**

Identification of anatomic structures as seen in cadaver.

Su Qtr. 1 cl, 2 2-hr labs. **Prereq:** Enrollment in rad tech.

**687 Radiologic Technology Instruction U 2-6**

Planned professional teaching experience under supervision in a radiologic technology education program.

Wi Qtr. Arr. **Prereq:** Hlth Edu 400 and permission of instructor, enrollment in rad tech or appropriate professional certification. Repeatable to a maximum of 12 cr hrs.

## Radiology

S209 Rhodes Hall, 410 West 10th Avenue, 293-8315

**670 Medical Radiation Physics U P G 2**

Ionizing radiations, their production, properties and interaction with materials of medical interest; physical principles of radiation therapy, radiation dosimetry, and radiation protection.

Au, Sp Qtrs. 2 cl. **Prereq:** Permission of instructor.

**680 Radiation Biology U P G 2**

Effect of ionizing radiation in biological systems at the molecular, cellular, organ, organism, and community levels with special emphasis on medical implications and radiation safety.

Wi Qtr. 2 cl. **Prereq:** Permission of instructor.

**740 Clinical Radiology P G 5**

Analysis of various radiographic examinations and the opportunity to make presentations.

Su, Au, Wi, Sp Qtrs. **Prereq:** Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**750 Radiologic Anatomy G 2**

Anatomy of specific regions or areas as it applies to the interpretation and understanding of diagnostic images.

Sp Qtr. **Prereq:** Satisfactory completion of Med Coll 662, or Anatomy 712 or equiv and permission of instructor. Repeatable to a maximum of 8 cr hrs. Cross-listed with Cell Biology, Neurobiology and Anatomy 750.

**793 Individual Studies**

**Prereq:** Permission of instructor.

**813\* Magnetic Resonance Spectroscopy and imaging I G 3**

Presentation of the basic principles of MRI/MRS, including basic MR physics, pulse sequences, adiabatic excitation, coil design, MR hardware, image formation, localized spectroscopy.

Wi Qtr. 2 1.5-hr cl. **Prereq:** Chem 521 or equiv, Biochem 511 or equiv, grad standing, and permission of instructor. Cross-listed in Biomedical Engineering.

**814\* Magnetic Resonance Spectroscopy and imaging II G 3**

Presentation of the basic principles of MRI/MRS including basic MR physics, pulse sequences, adiabatic excitation coil design, MR hardware, image formation, localized spectroscopy.

Sp Qtr. 2 1.5-hr cl. **Prereq:** 813, grad standing, permission of instructor. Cross-listed in Biomedical Engineering.

**830\* Molecular Basis of Mutagenesis and Carcinogenesis G 3**

Nature and mechanism of carcinogen-DNA interaction; cellular processing of genomic alterations and role of genotoxin-induced premutagenic/precarcinogenic lesions in neoplasia.

Sp Qtr. 2 cl. **Prereq:** Biochem 613, 614, 615 sequence or MBiochem 827 or Pharmacy 677 or permission of instructor, and grad standing.

**850 Seminar**

Su, Au, Wi, Sp Qtrs. 1 cl. **Prereq:** Permission of instructor.

**850.09 Radiation Oncology G 1**

Selected topics of particular current interests in both research and applications of ionizing radiation in the treatment of cancer.

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**850.10 Radiobiology G 1**

Introduction to state of the art developments and innovations resulting from research directed at the study of cellular-molecular-environmental interactions.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**850.20 Physics of Imaging G 1**

Selected topics of current interests in research, development, and technology in medical physics as applied to medical imaging.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**850.26 Physics of Radiation Therapy G 1**

Selected topics of interest in research and developments of the methodology and technology of radiation treatment, planning, dosimetry, and equipment.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research in Radiology G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Religious Studies

308 Dulles Hall, 230 West 17th Avenue, 292-2559

Philosophy of Religion

See Philos 270.

Sociology of Religion

See Sociol 467.

Special Topics in Cultural Anthropology: Anthropology of Religion

See Anthropol 620.11.

**270 Introduction to Comparative Religion U 5**

Introduction to the academic study of religion through comparison among major traditions (Judaism, Christianity, Islam, Hinduism, Buddhism, etc.) and smaller communities.

H270 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for Comp Std 270. Cross-listed in Comparative Studies in the Humanities. GEC arts and hums cultures and ideas course.

**294 Group Studies U 3-5**

Groups of students are given an opportunity to pursue special studies not otherwise offered.

H294 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Repeatable to a maximum of 15 cr hrs.

**321 The Religions of India U 5**

History and structure of South Asian religions with attention to myth, ritual, art, philosophy, and social stratification.

Prereq: 270 or Comp Std 270; or 102.01 102.02, 202.01, or 202.02 recommended.

**322 Native American Religions U 5**

Comparative survey of indigenous religions of North, Central, and South America; and patterns and diversity in religious experience, cosmologies, myths, rituals, social organizations, and sacred roles.

Prereq: 270 or Comp Std 270; Comp Std 102.01, 102.02, 202.01 or 202.02 recommended.

**323 The Buddhist Tradition U 5**

History and structure of Buddhism from founding to present in South, Southeast, and East Asia; emphasis on rituals, beliefs, and local and regional variations.

Prereq: 270 or Comp Std 270; Comp Std 102.01, 102.02, 202.01 or 202.02 recommended. Not open to students with credit for EALL 323. Cross-listed in East Asian Languages and Literatures.

**324 African Religions U 5**

Survey of African traditional religions and their interaction with Islam and Christianity in Africa and the diaspora; emphasis on cosmologies, myth, ritual, ethics, and witchcraft.

Prereq: 270 or Comp Std 270; Comp Std 102.01, 102.02, 202.01 or 202.02 recommended.

**376 The Jewish Mystical Tradition U 5**

The history of Jewish mysticism from antiquity to the present, with emphasis on its implications for the comparative study of religious experience.

H376 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Hebrew 376. Cross-listed in Hebrew. GEC arts and hums cultures and ideas course.

**620 Approaches to the Study of Religion U G 5**

Survey and comparison of concepts, categories, theories, and methods used by various disciplines in the study of religion.

Prereq: 270 or Comp Std 270 or English 280 or Hebrew 273 or Philos 270 or grad standing or permission of instructor; 270 or Comp Std 270 recommended.

**641 The Japanese Religious Tradition U G 5**

A survey of the Japanese tradition, including Shinto, Buddhism, Taoism, New-Confucianism, and folk religion from the 6th century B.C.E. to the present.

Prereq: Permission of instructor. Not open to students with credit for Japanese 641. Cross-listed in Japanese.

**651 Topics in Religious Studies U G 5**

Critical study of selected themes and topics in religious studies; emphasis on comparative study of myth, ritual, religious experience, praxis, history, art, etc.

Prereq: 270 or Comp Std 270 or grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies U G 1-5**

Students may register for individual directed study in areas not covered in regular course work.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 3-5**

Groups of students are given an opportunity to pursue special studies not otherwise offered.

Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of reading arranged for each student, with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing; a grade of A in at least half the major courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed. Repeatable to a maximum of 10 cr hrs. Open only to candidates with distinction in rel stds.

## Respiratory Therapy

School of Allied Medical Professions

431 Atwell Hall, 1583 Perry Street, 292-8445

**320 Components of Respiratory Health U 4**

Survey of normal respiratory mechanisms with specific consideration for the basis of respiratory therapeutics, the respirable environment and the role of the therapist.

Au Qtr. 2 2-hr cl. Prereq: Admission to the Resp Ther Division or permission of instructor.

**400 Basic Respiratory Care U 6**

Study of theories, procedures, and equipment utilized in delivering, monitoring, and evaluating basic respiratory therapeutics to patients with compromised respiratory function in the hospital setting.

Au Qtr. 2 2-hr cl, 2 3-hr labs. Prereq: Admission to Resp Ther Division.

**410 Introduction to Clinical Respiratory Care U 4**

An introduction to basic cardiopulmonary assessment and life support techniques, infection control, the medical record, and the clinical environment.

Au Qtr. 1 2-hr cl, 1 3-hr lab, 1 3-hr clinical. Prereq: Admission to Resp Ther Division.

**420 Pulmonary Rehabilitation and Continuing Care U 3**

Theories, procedures, equipment, standards, organizations, and legislation applicable to the delivery of respiratory therapeutics in non-hospital settings.

Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq 400.

**430 Pulmonary Function Testing U 3**

Study of theories, procedures, standards, and interpretations of pulmonary functions with consideration of mechanical and electronic principles of testing equipment.

Au Qtr. 1 2-hr cl, 1 3-hr lab. Prereq or concur: 320.

**450 Arterial Blood Gas Analysis U 3**

A study of the methods and procedures for obtaining arterial blood, the principles and standards of analysis, and application of the physiologic data.  
Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 320, 430.

**475 Mechanical Ventilation U 4**

Major emphasis is placed on all aspects of the management of the patient-ventilator system and artificial airways.

Wi Qtr. 2 2-hr cl. Prereq: 400, 410, 430; concur: 476.

**476 Mechanical Ventilators and Artificial Airways U 3**

Lectures, demonstrations, and laboratories on the various mechanical ventilators and artificial airways in use.

Wi Qtr. 1 2-hr cl, 1 3-hr lab. Prereq: 400, 410, 430; concur: 475

**480 Respiratory Disease U 2**

A study of the etiologies, manifestations, and treatment of respiratory diseases and their clinical courses.

Wi Qtr. 1 2-hr cl. Prereq: 320, 400, 430.

**489 Clinical Experience**

Su, Au, Wi, Sp Qtrs. 4 hr/wk for each credit hour. Prereq: Admission to the Resp Ther Division. Off-Campus field experience required.

**489.20 Clinical Experience: Phase I U 3**

Clinical application of basic respiratory therapeutics and non-invasive cardiopulmonary function testing.

Wi Qtr. 120 hrs. arr. Prereq: 320 and 400 and 410 and 430. Not open to students with credit for 489.02 or 489.05.

**489.30 Clinical Experience: Phase II U 3**

Clinical application of intensive respiratory care, evaluation of pulmonary function with emphasis on arterial blood gas analysis.

Sp Qtr. 120 hrs. arr. Prereq: 450 and 475 and 476 and 489.20. Not open to students with credit for 489.04 and 489.10.

**489.40 Clinical Experience: Phase III U 3**

Clinical application of adult, neonatal, and pediatric intensive respiratory care; home, continuing, and subacute respiratory care with emphasis on pulmonary rehabilitation.

Su Qtr. 360 hrs arr. Prereq: 489.30 and 500 and 515. Not open to students with credit for 489.06 or 489.07 or 489.08.

**489.50 Clinical Experience: Phase IV U 2**

Clinical application of patient evaluations, developing respiratory care plans and implementing clinical protocols, providing intensive respiratory care, multi-skilling practices, assisting physicians with special procedures.

Au Qtr. 80 hrs arr. Prereq: 489.40.

**500 Neonatal and Pediatric Respiratory Therapy U 3**

Neonatal and pediatric pulmonary pathophysiology with consideration of the necessary adaptations of equipment and therapeutics for application to the pediatric patient.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 475 and 476.

**515 Intensive Respiratory Care U 5**

Etiology, manifestations, and treatment of respiratory failure, including principles, techniques, and equipment associated with advanced cardiopulmonary monitoring and cardiac life support.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 475, 476, and 480.

**520 Administration of Respiratory Therapy Services U 3**

An analysis of management processes utilized by respiratory therapy services including organization, communication, quality assurance, audit, budget and regulatory processes, personnel management, and educational functions.

Au, Wi Qtrs. Prereq or concur: Alli Med 630.

**589 Advanced Clinical Practice U 1-5**

Supervised clinical education and experiences in respiratory therapy education, administration of respiratory services, and areas of advanced professional practice.

Su, Au, Wi, Sp Qtrs. 8 hrs/wk, 1 cr hr. Prereq: Written permission of instructor and satisfactory completion of all respiratory therapy professional courses. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**593 Individual Studies in Respiratory Therapy U 1-5**

Guided study of topics or pursuit of individual experiences in respiratory therapy.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to the Respiratory Therapy Division or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**595 Seminar U 1-5**

Conferences, group discussions, and presentations of selected topics.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to Respiratory Therapy or permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**600 Fundamentals of Respiratory Care Research U G 3**

Survey of research problems, methods, and designs utilized in respiratory care, with emphasis on data presentation and analysis.

Au Qtr. 2 1.5-hr cl. Prereq: Psych 220, or Stat 135 or 145 or equiv, and 4th yr or grad standing.

## Romance Linguistics

266 Cunz Hall, 1841 Millikin Road, 292-4958

Information concerning course frequency and quarters of offering, if not specified, may be available by contacting the department.

**811\* Romance Linguistics I G 5**

A general survey of the development of the Romance languages and an introduction to the basic materials and techniques of investigation.

2 2-hr cl. Prereq: Permission of instructor.

**812\* Romance Linguistics II G 5**

Topics and problems, both synchronic and diachronic; special attention to the minor Romance languages.

Wi Qtr. 2 2-hr cl. Prereq: 811 or permission of instructor.

**831\* Seminar in Romance Linguistics G 3-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**893 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-15**

Investigation of minor problems in the various fields of Romance linguistics.

Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**999 Research in Romance Linguistics G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Romanian

232 Cunz Hall, 1841 Millikin Road, 292-6733

See also Slavic Languages and Literatures.

**101 Elementary Romanian U 5**

Extensive practice in the basic language skills.

Au Qtr. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang course.

**102 Elementary Romanian U 5**

The elements of Romanian grammar with oral and written exercises; development of conversational skill; reading, vocabulary building, attention to Romanian idioms.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

**104 Intermediate Romanian U 5**

Reading, oral and written practice, grammar review; balanced use of the four basic skills (reading, oral comprehension, speaking, and writing).

Au Qtr. 5 cl. Prereq: 112 or equiv with permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

**111 Intensive Intermediate Romanian U 5,10**

An intensive course that combines the content of two quarters of Romanian to complete the presentation of the basic Romanian grammar and readings based on Romanian geography, history, and customs.

Prereq: 102. Equiv to the third and fourth courses of the foreign language sequence; successful completion of 101-102-111 fulfills the Arts and Sciences foreign language requirement. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 or equiv will enroll for 5 cr hrs. GEC for lang course.



**112 Intensive Romanian U 5,10,15**

Elementary and intermediate Romanian for students desiring comprehensive knowledge of Romanian in the shortest possible time.

Prereq: Permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Full-time fees required regardless of number of cr hrs. Equiv to 101, 102, 103. Students may not register for any other course if they enroll in 112. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in Romanian will enroll for 15 cr hrs. Regardless of cr hrs enrolled, a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. GEC for lang course. No audit. SS Admis Cond course.

**235 Introduction to Romanian Culture U 5**

Romanian literature in its cultural context, survey of the relationship of literature, art, cultural traditions from the beginnings to the present.

Taught in English. GEC arts and hums cultures and ideas course.

**293 Individual Studies U 1-5**

Individual studies in Romanian.

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Group studies in Romanian language, literature, and culture.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs.

**405 Conversation and Composition I U 5**

Drill in everyday patterns of conversation and elementary practice in writing.

Prereq: 104 or 111 or permission of instructor.

**407 Conversation and Composition II U 5**

Review of Romanian grammar; written compositions; perfection of pronunciation, translation practice, and expansion of vocabulary.

Prereq: 405 or permission of instructor.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

## Rural Sociology

203 Agricultural Administration Building, 2120 Fyffe Rd, 292-4624

**105 Introduction to Rural Sociology U 5**

Principles of society, major social institutions, and social change; emphasizes social changes in rural life, rural organizations, population, and family living.

Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for Sociol 101 or 201. This course is available for EM credit. BER/GEC/LAR course. SS Admis Cond course.

**376 Social Groups in Developing Societies U 5**

Discussion of different life experiences, statuses, and behavior of people in major social groupings in developing societies.

Sp Qtr. 2-2-hr cl. Prereq: 5 cr hrs in rural soc, sociol, or related social science; or permission of instructor. BER/GEC/LAR course.

**489 Internship in Rural Sociology U 3-5**

Supervised experience with an approved firm or organization; written comprehensive report required.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of major adviser. Open only to dept majors. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**562 Diffusion of Innovations U G 3**

Examines the sociological processes involved in the dissemination of new ideas and technologies in developing nations and U.S. Assesses the consequences of new technologies for farmers, peasants, communities, and public well-being.

Au Qtr. 1 3-hr cl. Not open to students with credit for 421.

**622 Amish Society U G 5**

Analysis of the historical, social, religious, economic and cultural dimensions of the Amish.

Wi Qtr. 2 2-hr cl. Prereq: 10 cr hrs in Rurl Soc, Sociol, or related social sciences, or permission of instructor.

**642\*\* Concepts and Theories in Rural Sociology U G 5**

Examines the sociological significance of "rurality" and the conceptual perspectives applied to major substantive areas in rural sociology, such as community, environment, and agriculture. Sp Qtr. 2 2-hr cl. Prereq: 15 cr hrs in rur soc and/or sociol at the 300-level or higher.

**666\*\* Rural Poverty U G 5**

Evaluation of the factors which create and maintain poverty and inequality, with focus on the rural U.S., developing nations, and the comparative analysis of spatial inequalities.

Sp Qtr. 2 2-hr cl. Prereq: 15 cr hrs in rur soc or related social science.

**678\*\* Women in Rural Society U G 5**

Women's role in rural society from a comparative perspective, focusing on agriculture, the environment, informal sector, and household production, both in developing and developed countries.

Sp Qtr. 2 2-hr cl. Prereq: 15 cr hrs in rur soc, sociol, or related social science, or permission of instructor.

**693 Individual Studies**

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor.

**693.01 Rural Social Problems U G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.02 Rural Formal Organizations U G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.03 Rural Sociology in Foreign Areas U G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.04 Research Methods in Rural Sociology U G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.05 Rural Community and Institutions U G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.06 Community Development U G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.07 Diffusion of Technology U G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**693.08 General Rural Sociology U G 2-5**

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

An intensive study of a selected area in rural sociology appropriate to the needs of the group not provided in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: permission of instructor. Repeatable to a maximum of 8 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**766\*\* Environmental Sociology U G 5**

Sociological approaches to the study of environmental policy. Analysis of major issues relating to the use and abuse of natural resources.

Wi Qtr. 2 2-hr cl. Prereq: 15 cr hrs in rur soc and/or sociol at 400 level or above.

**788\*\* Sociological Theory Applied to Domestic Development U G 5**

Application of general sociological theories and development research findings to the analysis of domestic rural development; emphasis upon consensus and conflict models.

Au Qtr. 1 3-hr cl. Prereq: 15 cr hrs in rur soc or sociol or related social science. Not open to students with credit for 796.06.

**789 Survey Research Practicum G 5**

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

Sp Qtr. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in AED Econ, Agr Educ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, Sociol, or Stat. Cross-listed in AED Econ, Agr Educ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, Sociol, and Stat.

**792\*\* Rural Sociology of Development and Social Change U G 5**

Overview of sociological principles, theories, and practice applied to international development and social change in rural settings.

Wi Qtr. 2 2.5-hr cl. Prereq: 15 cr hrs in sociology, rural soci, related soci sc, or international studies courses; or permission of instructor. Not open to students with credit for 662.

**999 Research G 1-18**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Russian

232 Cunz Hall, 1841 Millikin Road, 292-6733

See also Slavic Languages and Literatures.

### 101 Elementary Russian I

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

#### 101.01 Classroom Track U 5

Su, Au, Wi Qtrs. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

#### 101.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs.

### 102 Elementary Russian II

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

#### 102.01 Classroom Track U 5

Prereq: 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

#### 102.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 101.01 or 5 cr hrs of 101.51 or permission of instructor. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the quarter may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs.

### 103 Intermediate Russian I

Readings, oral and written practice, grammar review.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

#### 103.01 Classroom Track U 5

Au, Sp Qtrs. 5 cl. Prereq: 101.01 or 5 cr hrs or 102.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

#### 103.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Grade of B- or above in 102.01 or 5 cr hrs of 102.51 or permission of instructor. Students may register for 102.51 and 103.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs for 103.05. Repeatable to a maximum of 5 cr hrs.

### 104 Intermediate Russian II

Readings, oral and written practice, grammar review.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

#### 104.01 Classroom Track U 5

Balanced use of the four basic skills: reading, oral comprehension, speaking, and writing; emphasis on Russian literary texts.

Au, Wi Qtrs. Prereq: 103.01 or 5 cr hrs of 103.51. Not open to students with credit for 104. This course is available for EM credit.

#### 104.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 103.01 or 5 cr hrs of 103.51 or permission of instructor. Students may register for 103.51 and 104.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs.

### 110 Intensive Elementary Russian U 5,10

An intensive course combining the content of 101.01 and 102.01.

Not open to students with credit for 102, 102 decimal subdivisions, or 112; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 101 or any cr hrs of 101 decimal subdivisions may not register for more than 5 cr hrs. Equiv of first and second courses of the foreign language sequence; successful completion of 110-103-104 or 110-111 fulfills the ASC foreign language requirement. GEC for lang course.

### 111 Intensive Intermediate Russian U 5,10

An intensive course combining the content of 103.01 and 104.01.

Prereq: 102. Not open to students with credit for 104 or 104 decimal subdivisions; or to native speakers of this language through regular course enrollment or EM credit. Equiv to third and fourth courses of the foreign language sequence; successful completion of 101-102-111 fulfills the Arts and Sciences foreign language requirement. Students with credit for 103 or any hours of 103 decimal subdivisions, or 112 may not register for more than 5 cr hrs. GEC for lang course.

### 135 Introduction to Russian Culture U 5

Russian literature in its cultural context, survey of the relationship of literature, art, music, and drama from the beginnings to the present.

Su, Au, Wi, Sp Qtrs. Taught in English. GEC arts and hums cultures and ideas course.

### 250 Masterpieces of Russian Literature in Translation U 5

Reading and analysis of works by the great masters, Turgenev, Dostoevsky, and Tolstoy, and the Nobel Prize winners, Bunin, Sholokhov, Pasternak, and Solzhenitsyn.

Su, Au, Wi, Sp Qtrs. Taught in English. GEC arts and hums lit course.

### 405 Russian Conversation and Composition

Drill in everyday patterns of conversation and elementary practice in writing.

#### 405.01 Classroom Track U 5

Wi, Sp Qtrs. Prereq: 104 or permission of instructor. Not open to students with credit for 405; or to native speakers of this language through regular course enrollment or EM credit. Students must register for and complete 5 cr hrs during the qtr.

#### 405.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. Prereq: 104.01 or 104.51 or permission of instructor. Not open to students with credit for 405 or 405.01; or to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 5 cr hrs. Students may register for 104.51 and 405.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete five credit hours during the qtr may proceed to 407. Progress is sequential from one credit hour to the next, with proficiency at the level of 80% required for advancement.

### 407 Intermediate Russian Conversation and Composition

Review of Russian grammar; written compositions, perfection of pronunciation, translation practice, and expansion of vocabulary.

#### 407.01 Classroom Track U 5

Prereq: 405.01 or 5 cr hrs of 405.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students must register for and complete 5 cr hrs during the qtr.

#### 407.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. Prereq: 405.01 or 5 cr hrs of 405.51 or permission of instructor. Not open to students with credit for 407 or 407.01; or to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one credit hour to the next, with proficiency at the level of 80% required for advancement. Not open to students with credit for 407 or 407.01. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

### 511 Language Maintenance Course U 2

Intended for students desiring to maintain an active knowledge of Russian without enrolling in advanced courses in grammar, literature or linguistics. Intermediate level conversation and non-literary popular readings.

2 cl. Prereq: 407, 407.01 or 407.51 or permission of instructor. Repeatable to a maximum of 12 cr hrs. Credit does not count for the major or minor. This course is graded S/U.

### 512 Practical Russian Conversation U G 3

Contemporary Russian conversational patterns.

Sp Qtr. 3 cl. Prereq: 30 hrs of Russian or permission of instructor. Not open to students with credit for 695, 895 or 995.

### 514 Camp Horizon (Lager' Gorizont) U G 1

A weekend total immersion Russian language camp; Russian only spoken; lectures, discussions, films, singing, dancing.

Sp Qtr. Friday 6 pm-Sunday 2 pm. Prereq: 560 or equiv, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Travel and subsistence costs will be borne by the student. This course is graded S/U.

### 520 Russian Literature in English Translation: From Pushkin to Turgenev U G 5

An introduction to the Russian novel, drama, and poetry; major contributions of Pushkin, Lermontov, Gogol, Ostrovsky, Goncharov, and Turgenev.

### 521 Russian Literature in English Translation: From Dostoevsky to Chekhov U 5

Reading and analysis of works by Dostoevsky, Tolstoy, Saltykov-Shchedrin, Turgenev, Chekhov.

**522 Russian Literature in English Translation: 20th-Century Literature, 1900-1928 U G 5**

Survey of Russian literature, 1900-1928.

**523 Russian Literature in English Translation: 20th-Century Literature, 1928-2000 U G 5**

Survey of Russian literature, 1928-2000.

**560 Contemporary Russian in Cultural and Literary Contexts I U G 5**

An intermediate Russian language course designed to improve the student's ability to communicate accurately and effectively in spoken and written Russian.

Au Qtr. Prereq: 407 or permission of instructor.

**561 Contemporary Russian in Cultural and Literary Contexts II U G 5**

An intermediate Russian language course designed to improve the student's ability to communicate accurately and effectively in spoken and written Russian.

Wi Qtr. Prereq: 560 or permission of instructor.

**562 Current Events through Russian Media U G 5**

An introduction to the Russian mass media with an emphasis on current events; focuses on developing skills for approaching written and oral native Russian texts.

Sp Qtr. Prereq: 561 or permission of instructor.

**571 Basic Russian for Graduate Students G 5**

Basic elements of Russian grammar.

Prereq: Grad standing. Credit does not apply to the minimum hours required for the master's or doctoral degrees.

**572 Russian for Research I G 3**

Prereq: Grade of C or above in 571 or equiv. Credit does not apply to the minimum hours required for the master's or doctoral degrees. Repeatable to a maximum of 6 cr hrs. Satisfactory completion of this course (grade A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement. No audit.

**573 Russian for Research II G 3**

Reading of difficult material at a reasonable rate of speed and with only infrequent use of dictionaries.

Prereq: Grade of A or B in 572 or equiv preparation demonstrated by a placement test and permission of instructor. Open only to grad students. Repeatable to a maximum of 6 cr hrs. Completion of this course with a grade of A or B may be accepted by the student's dept as evidence of a thorough reading knowledge of Russian. Credit does not apply to minimum hrs required for the master's or PhD degree. No audit.

**580 Reading Russian I**

Readings from a variety of sources with special emphasis on contemporary materials.

Prereq: 407.01 or 5 cr hrs in 407.51 or 573.

**580.51 Individualized Track U G 1-5**

Strategies for reading Russian expository prose; skimming, scanning, reading for complete comprehension, and critical reading. Authentic texts from contemporary journalistic prose.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Students may register for 407.51 and 580.51 concurrently. Students register for and complete from 1 to 3 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 581.51. Progress is sequential from one cr hr to the next, with a proficiency at the level of 80% required for advancement.

**581 Reading Russian II****581.51 Individualized Track U G 1-3**

Continuation of 580; further development of strategies for reading Russian expository prose; authentic texts from contemporary journalistic prose.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 580.01 or 5 cr hrs in 580.51 or permission of instructor. Repeatable to a maximum of 3 cr hrs. Students register for and complete from 1 to 3 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.

**582 Reading Russian III****582.51 Individualized Track U G 1-3**

Continuation of 581.51; further development of strategies for reading Russian expository prose; authentic texts from contemporary journalistic prose.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 3 cr hrs of 581.51 or permission of instructor. Repeatable to a maximum of 3 cr hrs. Students register for and complete from 1 to 3 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 581.51 and 582.51 concurrently with permission of instructor.

**609 Advanced Reading, Conversation, and Composition I U G 4**

Reading of contemporary prose and verse, presentation of oral and written reports, drill in intonation patterns, translation from English into Russian. Prereq: 561 or permission of instructor.

**610 Advanced Reading, Conversation, and Composition II U G 4**

Prereq: 609 or permission of instructor.

**617\*\* Business Russian U G 5**

Simulated trade negotiations with the Russians providing sufficient terminology to facilitate bi-lingual trade negotiations.

Prereq: 30 hrs of Russian or permission of instructor.

**631 Introduction to Russian Linguistics U G 3**

An introduction to linguistic concepts useful in the study of Russian; survey of major figures in Russian historical and descriptive linguistics.

Prereq: 30 cr hrs in Russian.

**635 Practical Russian Pronunciation U G 5**

Lectures and practical exercises, use of phonetic symbols, corrective exercises, and problems of teaching pronunciation.

Prereq: 30 cr hrs in Russian.

**640 Introduction to the Structure of Russian U G 5**

Elements of Russian pronunciation and grammar with comparisons to English.

Prereq: 631.

**644\* Russian Folklore U G 5**

From the beginning to present; proverbs, the oral epic, historical songs, folktales, the folk theatre; analysis of the folklore component in modern Russian literature.

Taught in English.

**650 Dostoevsky U G 5**

Critical analysis of the major novels and shorter works; intellectual and literary development of Dostoevsky.

Prereq: Permission of instructor required of undergrad non-majors. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list.

**651 Tolstoy U G 5**

Analysis of all major works including the novels, plays, stories, and important polemical works.

Prereq: Permission of instructor required of undergrad non-majors. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list.

**653\*\* Russian Drama U G 5**

Emphasis on the period from 1850 to present day; Ostrovsky, Chekhov, Gorky, Andreyev, Blok, and Soviet writers Leonov and Kataev.

Prereq: 10 cr hrs in Russian or other literature courses at the 200 level or above. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list.

**656 Russian Women Writers U G 5**

The contributions of women writers to Russian literature and culture in the 19th and 20th centuries; emphasis on the contesting and transformation of gender roles.

**660 Basic Approaches to the Study of Russian Literature U G 3**

Historical overview of Russian literary criticism and theory; basic practical approaches to the study of literary texts.

Prereq: Grad standing in dept or 25 hrs of Russian literature, or permission of instructor.

**675 Writing Seminar on Topics of Russian Literature, Language, and Life U 5**

Junior-senior seminar explores issues of Russian language and literature, focusing on reading in Russian and on honing English oral and writing skills.

Prereq: GEC 2nd writing course; jr or sr standing; or permission of instructor. Not open to grad students in Slavic. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 30 cr hrs (including cr hrs in 693.01 through 693.08) in any combination of decimal subdivisions. These courses are graded S/U.

**693.20 Literature U G 2-10**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.30 Linguistics U G 2-10**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.40 Language U G 2-10**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**693.50 Unspecified U G 2-10**

Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**711 Advanced Russian Linguistic Stylistics U G 5**

Advanced study of Russian morphological, syntactic and semantic features and their stylistic function in a literary text.

Prereq: 610 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**720 History of the Russian Language U G 5**

Survey of phonetic, morphological, and syntactic changes in Russian from prehistory to the present.

Not open to students with credit for 820.

**723 Topics in Russian Poetry U G 5**

Topics vary: the history of Russian poetry, versification theory; literary schools such as symbolism, formalism, or futurism; study of individual poets from any period.

Prereq: 610 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**750 Pushkin and his Time G 5**

Analysis of Eugene Onegin as poetry and an encyclopedia of the times; social, political, and cultural trends in the 1820s and 1830s; romantic poets.

Prereq: 10 hrs of Russian literature at the 200 level or above or permission of instructor.

**752 Turgenev, Chekhov, and Aspects of Russian Realism U G 5**

Study of Russian prose works outside of the satirical genre and others than the prose of Dostoevsky and Tolstoy.

Prereq: 10 hrs of Russian or other literature at the 200 level or above, or permission of instructor.

**754 Contemporary 20th-Century Russian Literature G 5**

Russian literature of the 1960s through the present.

Prereq: Grad standing and good reading ability in Russian; or permission of instructor.

**801 College Teaching of Russian I G 3**

Methods and techniques for teaching Russian at the college level, selection and preparation of teaching and testing materials, the language laboratory, and other aids.

Au Qtr. Prereq: 611 or equiv, or permission of instructor. Requires participation in intensive workshop in September.

**826 Topics in the Structure of Russian G 5**

Analysis and description of the structure of contemporary standard Russian.

Prereq: 640 or equiv with permission of instructor. Repeatable to a maximum of 15 cr hrs.

**827 Topics in the History of Russian G 5**

Development of Russian from Common Slavic to contemporary standard Russian with consideration of its place within East Slavic.

Prereq: 720 or equiv with permission of instructor. Repeatable to a maximum of 15 cr hrs.

**829 Old Russian Literature: 15th-17th Century G 5**

Study of literary works of various genres cultivated in this period.

**831 Russian Literature, 1650-1800 G 5**

The baroque period, classicism, and sentimentalism; emphasis on the classical period of the 18th century.

Prereq: 2nd yr grad standing or permission of instructor.

**851 Seminar in Russian Literature, 1820-1917 G 3-5**

Repeatable to a maximum of 15 cr hrs.

**852 Seminar in Russian Literature since 1917 G 3-5**

Repeatable to a maximum of 15 cr hrs.

**993 Individual Studies**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

**993.20 Literature G 2-10**

Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**993.30 Linguistics G 2-10**

Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**993.40 Language G 2-10**

Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**993.50 Unspecified G 2-10**

Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

## Sanskrit

222 Oxley Hall, 1712 Neil Avenue, 292-4052

See also Linguistics.

**621^\* Elementary Sanskrit U G 5**

Introduction to Indo-European, Indic, and Sanskrit; reading of introductory texts.

Not open to students with credit for Linguist 621.

**622^\* Classical Sanskrit U G 5**

Reading of classical Sanskrit texts.

Prereq: 621 or permission of instructor. Not open to students with credit for Linguist 622.

## Scandinavian

314 Cunz Hall, 1841 Millikin Road, 292-6985

**222 Nordic Mythology and Medieval Culture U 5**

The myths and gods of northern Europe and the culture which produced them within a modern social and psychological context.

Au Qtr. 5 cl. Taught in English. GEC arts and hums lit course.

**500\* Masterpieces of Scandinavian Literature U G 5**

Selected masterpieces of Scandinavian literature in European cultural context.

Sp Qtr. 5 cl. Taught in English. GEC arts and hums lit course.

**520\* The Films of Ingmar Bergman U G 5**

Major works of Sweden's foremost director; stress on film as a creative expression of the development of modern aesthetic and philosophical concerns.

Sp Qtr. 2 cl, 1 3-hr cl. Taught in English. GEC arts and hums VPA course.

**571\* Reading the Scandinavian Languages U G 5**

Fundamentals of grammar of the Scandinavian languages for research purposes in the humanities, sciences, and social and behavioral sciences.

Wi Qtr. 5 cl.

**693 Individual Studies U G 2-5**

Investigation of problems in the various fields of Scandinavian literature and philology.

Au, Wi, Sp Qtrs. Arr. Prereq: Permission of chairperson. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and cumulative pt-hr ratio commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

## Scholars, University

University Honors & Scholars Center, 220 West 12th Avenue, 292-3135

**100 Scholars Survey**

Academic requirements, University procedures, grading system, resources; student rights and responsibilities; overview of majors and careers.

Not open to students with credit for Agr Int 100; Arts Col 100.01 or 100.02; Arts&Sci 100, 100.01, or 100.02; Bio Sci 100; Engineer 100; Hum Col 100; MPS Col 100; SBS Col 100, or any decimal subdivision of Univ Col 100.

**100.01 General U 1**

H100.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor.

**100.02 Health Sciences U 1**

H100.02 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor.

## Sensory Biophysics

105 Biological Sciences Building, 484 West 12th Avenue, 292-8772

### 601 Introduction to Sensory Biophysics U G 5

Anatomy and function of sensory systems; psychophysical research methods; mathematical descriptions of information transfer; biophysical models.

Wi Qtr. 5 cl. Prereq: Biology 101 or 113 or H115, Chem 122, Physics 112, and Math 117.

## Serbo-Croatian

232 Cunz Hall, 1841 Millikin Road, 292-6733

See also Slavic Languages and Literatures.

### 101 Elementary Serbo-Croatian I

Au Qtr. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang course. FL Admis Cond course.

#### 101.01 Classroom Track U 5

### 102 Elementary Serbo-Croatian II

Wi Qtr. Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course. GEC for lang course. FL Admis Cond course.

#### 102.01 Classroom Track U 5

### 103 Intermediate Serbo-Croatian I

Prereq: 102 or 102.01 or 5 cr hrs of 102.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

#### 103.01 Classroom Track U 5

### 104 Intermediate Serbo-Croatian II

Continuation of 103; development of the four skills.

Prereq: 103.01 or 5 cr hrs of 103.51 or equiv or permission of instructor. Not open to students with credit for 104 or 111; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

#### 104.01 Classroom Track U 5

### 111 Intensive Intermediate Serbo-Croatian U 5,10

An intensive course that combines the content of 103 and 104; balanced use of the four skills: reading, oral comprehension, speaking, and writing. Intended for students who wish to expedite the completion of the language requirement.

Prereq: 102. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 may not register for more than 5 cr hrs but must complete the entire course. GEC for lang course.

### 405 Conversation and Composition I

#### 405.01 Classroom Track U 5

Reading texts of moderate difficulty, conversation, and simple compositions.

Prereq: 104.01 or 5 cr hrs of 104.51 or 111 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

#### 405.51 Individualized Track U 1-5

Reading texts of moderate difficulty, conversations, and simple compositions.

Prereq: 104.01 or 5 cr hrs of 104.51 or 111 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Repeatable to a maximum of 5 cr hrs. Progress is sequential from one cr hr to the next, with proficiency at the level of 80 percent required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

### 407 Conversation and Composition II

#### 407.01 Classroom Track U 5

Reading from modern Serbo-Croatian literature, practice in writing and speaking.

#### 407.51 Individualized Track U 1-5

Reading from modern Serbo-Croatian literature; practice in writing and speaking.

Prereq: 405.01 or 5 cr hrs of 405.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Repeatable to a maximum of 5 cr hrs. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

### 581.51 Individualized Track U G 1-5

Continuation of 580.51; reading of somewhat more difficult unedited texts from contemporary magazines and newspapers; reading for comprehension without a dictionary.

Arr. Prereq: 5 cr hrs of 580.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.

## Shona

486 University Hall, 230 North Oval Mall, 292-3700

### 101^ Elementary Shona I U 5

Development of oral proficiency in elementary conversational Shona.

Au Qtr. 5 cl. GEC for lang course.

### 102^ Elementary Shona II U 5

Continued development of oral proficiency in elementary conversational Shona.

Wi Qtr. 5 cl. Prereq: 101. GEC for lang course. GEC for lang course.

### 103^ Intermediate Shona I U 5

Development of oral proficiency in intermediate conversational Shona.

Sp Qtr. 5 cl. Prereq: 101. GEC for lang course.

### 104^ Intermediate Shona II U 5

Continued development of oral proficiency in intermediate conversational Shona.

Sp Qtr. 5 cl. Prereq: 103. GEC for lang course.

## Slavic and East European Studies

322 Oxley Hall, 1712 Neil Avenue, 292-9660

See also Slavic Languages and Literatures.

### 694 Group Studies U G 1-5

Selected topics focusing on Slavs and East Europeans and the countries of Eastern Europe.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

## Slavic Languages and Literatures

232 Cunz Hall, 1841 Millikin Road, 292-6733

See also Bulgarian, Czech, East European Languages and Literatures, Hungarian, Polish, Romanian, Russian, Serbo-Croatian, and Ukrainian.

### 130 Introduction to Slavic Culture: The Vampire in East European and American Culture U 5

Introduction to East European culture (including ethnic subgroupings and religions), focusing on beliefs about vampires and their influence on western literature, film, and popular culture.

Au Qtr. Taught in English. GEC arts and hums cultures and ideas course.

### 245 Introduction to Slavic Literature and Culture U 5

Selected Slavic or East European literature(s) in its/cultural context; relationships between literature, film, drama; may include art and music.

Repeatable to a maximum of 15 cr hrs. Taught in English. GEC arts and hums lit course.

### 294 Group Studies U 1-5

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

### 367 The East European Experience in America U 5

An intermediate course that extends and refines expository writing and analytic reading skills, with an emphasis on writings about issues presented through the diverse voices of Eastern European immigrants in the United States from the nineteenth century to the present day.

Prereq: English 110 or 111, or equiv with permission of instructor, and soph standing. GEC second writing and social diversity course.

### 671 Grammar of Selected Slavic Languages U G 5

Fundamentals of grammar required for reading; the language to be taught will change each year.

Prereq: Permission of instructor. Repeatable to a maximum of 25 cr hrs. Individual languages not repeatable. Taught in English.

**672 Reading of Selected Slavic Languages U G 5**

Reading of elementary and intermediate texts and translation into English. Prereq: 671 (same language) or equiv. Repeatable to a maximum of 25 cr hrs. Individual languages not repeatable. Taught in English.

**693 Individual Studies**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson.

**693.20 Literature U G 2-10**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**693.30 Linguistics U G 2-10**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**693.40 Languages U G 2-10**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**693.50 Unspecified U G 2-10**

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-10**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**760 Survey of the Slavic Languages U G 5**

A general survey of all the Slavic languages and their common features. Not open to students with credit for 860. Knowledge of a Slavic language is helpful but not required.

**H783 Honors Research U 3-5**

Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of the Slavic courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**810 Old Church Slavonic G 5**

Study of the earliest Slavic language; reading and linguistic interpretation of original documents.

**812 Readings in Church Slavonic Texts G 5**

Reading and analysis of Church Slavonic texts of the later period.

Prereq: 810 or permission of instructor.

**821 Structure of Selected Slavic Languages G 5**

Structure of any of the following: Belorussian, Bulgarian, Czech, Sorbian, Macedonian, Polish, Serbo-Croatian, Slovak, Slovenian, or Ukrainian.

Prereq: Permission of instructor. Repeatable to a maximum of 25 cr hrs. Individual languages not repeatable.

**834 Medieval Slavic Literatures 9th-14th Century G 5**

Emphasis on the Eastern and South Slavic literatures.

Prereq: Permission of instructor.

**861 History of the South Slavic Languages G 5**

Bulgarian, Macedonian, Serbo-Croatian, and Slovenian, with emphasis on Serbo-Croatian and its relation to the other South Slavic languages.

Prereq: Good command of Russian and acquaintance with a second Slavic language or permission of instructor.

**862 History of the West Slavic Languages G 5**

Polish, Czech, Slovak, Polabian, Kashubian, and Sorbian, with special emphasis on Polish and its relation to the other West Slavic languages.

Prereq: Good command of Russian, and acquaintance with a second Slavic language or permission of instructor.

**864 Comparative Slavic Grammar G 5**

Development of Indo-European phonology and morphology into Common Slavic and the development in contemporary Slavic languages.

Prereq: 760 or permission of instructor.

**870 Seminar in Slavic Philology G 3-5**

Historical and comparative studies in the Slavic languages and related language families, including Baltic and Finno-Ugric.

Repeatable to a maximum of 20 cr hrs.

**871 Seminar in Slavic Linguistics G 3-5**

Descriptive and transformational studies in Russian and other Slavic languages.

Repeatable to a maximum of 20 cr hrs.

**993 Individual Studies**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson.

**993.20 Literature G 2-10**

Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**993.30 Linguistics G 2-10**

Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**993.50 Unspecified G 2-10**

Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**999 Research in Slavic G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Social and Behavioral Sciences, College of

1010 Derby Hall, 154 North Oval Mall, 292-8448

**100 Social and Behavioral Sciences Survey U 1**

Academic requirements, University procedures, grading system, resources; student rights and responsibilities; overview of Social and Behavioral Sciences areas of study, Arts and Sciences services.

Au Qtr. H100 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Agr Int 100, Arts Col 100.01 or 100.02, Arts&Sci 100 or 100.01 or 100.02, Bio Sci 100, Engineer 100, Hum Col 100, MPS Col 100, or any decimal subdivision of Univ Col 100. H100 is S/U graded.

**294 Group Studies U 1-5**

Interdisciplinary studies in the social and behavioral areas.

Repeatable to a maximum of 15 cr hrs.

**694 Group Studies U G 1-5**

Interdisciplinary studies in the social and behavioral areas.

Repeatable to a maximum of 15 cr hrs.

## Social Work

300 Stillman Hall, 1947 College Road, 292-6288

**230 Individual Needs and Societal Responses U 5**

Introductory understanding of human needs, social values, ideologies, and institutional structures which have shaped the evaluation of social welfare programs in America.

Au, Wi, Sp Qtrs. 2 1.5-hr cl, 2 1-hr labs. Not open to students with credit for 220. BER/GEC/LAR course.

**300 Minority Perspectives: Race, Ethnicity, and Gender U 5**

Examination of the structure of human societies, cultures, and institutions, and the allocation of resources from the vantage point of oppressed minority populations.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 10 cr hrs of course work in polit sc, psych, or sociol. Not open to students with credit for 600. GEC course.

**494 Group Studies U 2-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered in social work.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 10 cr hrs.

**503 Juvenile Delinquency: Origins and Social Control U 5**

Examination of juvenile delinquency as a social problem with emphasis on its history, policy initiatives, and treatment.

Wi Qtr. 2 2.5-hr cl. Prereq: Jr standing; 15 cr in social sciences. GEC Capstone 1.

**520 Problems, Policies, and Programs in Social Welfare I U 3**

An introduction to historical backgrounds and the utilization of an analytical framework in the study of the American social welfare system.

Au Qtr. 2 1.5-hr cl. H520 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Soc work major; nonmajors with permission only.

**521 Problems, Policies, and Programs in Social Welfare II U 3**

Application of an analytical framework to the study of current issues and problems of policies, programs and social welfare services in the perspective of the American welfare system.

Wi Qtr. 2 1.5-hr cl. Prereq: 520.

**533 Determinants of Social Functioning I U 3**

Study of life cycle, growth, and development from birth through adolescence from bio-psycho-social perspective; selected theories of personality discussed in relationship to growth and development.

Au Qtr. 2 1.5-hr cl. H533 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Jr. standing in soc work.

**534 Determinants of Social Functioning II U 3**

Study of life cycle from young adulthood through old age including dying and death; discussion of influences on social functioning of group relationships, organizations, and institutions.

Wi Qtr. 1.5 hr cl. Prereq: 533.

**570 Quantitative Analyses of Social Data U 5**

Examination of social welfare data with a focus on data analysis; review of descriptive and inferential methods with a primary emphasis on interpretation and computer applications.

Wi Qtr. 22-hr cl, 1-hr lab arr. Prereq: 230 and Math 104 or equiv. GEC course.

**571 Introduction to Research Methods in Social Work U 4**

Science and society; research design; measuring variables; data collection, processing, and analysis.

Au Qtr. 2 2-hr cl. H571 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor.

**576 Critical Assessment of Social Research U 5**

Development of practical skills in critical and analytic writing in weighing competing ideas both in writing and oral forms.

Sp Qtr. 2 2.5-hr cl. Prereq: 571 or equiv, English 110 or 111, second writing course, and jr or sr standing. GEC/LAR course.

**593 Individual Studies U 1-5**

Individual study projects on problems and services in selected areas of social welfare; report required.

Su, Au, Wi, Sp Qtrs. Prereq: 10 cr hrs in soc work or related courses, approval of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**597 Adolescent Parenthood and Sexuality: International Perspectives U 5**

Examination of origins of adolescent sexual problems in milieus that develop different value systems; public policies and social programs designed to control adolescent sexuality and parenthood.

Su Qtr. 2 2.5-hr cl. Prereq: Sr standing; and 15 cr hrs of course work in social science in individual development, adolescence, the family, culture, and social change. GEC/LAR course.

**644 Social Work Practice Lab U 3**

Introduction to practice-relevant communication, interactional group skills; extensive use of discussion-participation, role-play, and demonstration with help of audio-visual media.

Sp Qtr. 2 1.5-hr cl. Concur: 645. Open only to social work majors.

**645 Social Work Practice I U 4**

Foundation professional values, practice knowledge and change-oriented action within a generalist ecological perspective for working with people at various levels of human systems.

Sp Qtr. 2 2-hr cl. Prereq: Jr standing and concur 644.

**646 Social Work Practice II U 3**

Values, knowledge, and skills of generalist social work practice with individuals and families by using an ecological problem-solving model.

Au Qtr. 2 1.5-hr cl. Prereq: 644 and 645; soc work majors only.

**647 Social Work Practice III U 3**

Generalist-ecological framework with professional values, knowledge, and skills essential to effective intervention with small groups and community groups.

Wi Qtr. 2 1.5-hr cl. Prereq: 646. Open only to soc work majors.

**689 Field Practice U 1-18**

Placement in a social welfare organization used by the college as a teaching center; student expected to assume a service provision role in a progressively responsible manner.

Au, Wi, Sp Qtrs. Social agency assignments. Prereq: 644, 645, and proof of liability insurance. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**690 Ethical Issues in Social Work Practice U G 4**

Historical, philosophical and legal foundations giving rise to ethical principles which underlie social work practice.

Su, Au Qtrs. 1 3-hr cl, 1-hr arr lab. Prereq: Sr standing. Satisfies 4 credits for the LSW license renewal.

**691 Case Management and Social Work Practice U G 4**

Social work competencies in the provision of services to address client problems and populations. Emphasis on client/family strengths and social networks.

Su, Sp Qtrs. 1 3-hr cl, 1 hr lab arr. Prereq: Sr standing. Satisfies 4 credits of LSW license renewal.

**694 Group Studies U G 1-5**

Selected topics.

Su, Au, Wi, Sp Qtrs. Arr.

**695 Integrative Seminars**

Examines the various fields of social work practice; focuses on developing the ability to set practice goals, decide methods of intervention, implement, and evaluate consequences.

Su, Au, Wi, Sp Qtrs.

**695.09 Alcoholism U G 3**

1 3-hr cl.

**695.11 Intensive, In-Home, Family-Based Treatment U G 3**

Holistic approach to home-based family services; includes advocacy, didactic instruction and resource networking.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl. May fill social work elective credits.

**695.12 Child and Family Services U G 3**

1 3-hr cl. Not open to students with credit for 640.01. May be taken to fulfill social work elective cr hrs.

**695.13 Corrections U G 3**

1 3-hr cl. Not open to students with credit for 640.02. May be taken to fulfill social work elective cr hrs.

**695.14 Aging U G 3**

1 3-hr cl. Not open to students with credit for 640.03. May be taken to fulfill social work elective cr hrs.

**695.15 Mental Retardation and Developmental Disabilities U G 3**

1 3-hr cl. Not open to students with credit for 640.04. May be taken to fulfill social work elective cr hrs.

**695.16 Physical Health Care U G 3**

1 3-hr cl. Not open to students with credit for 640.05. May be taken to fulfill social work elective cr hrs.

**695.17 AIDS: Facts and Issues U G 3**

Au Qtr. 1 2.5-hr cl. Certificate upon completion of 695.17, 695.18, 695.19.

**695.18 AIDS: Psychosocial Aspects U G 3**

Wi Qtr. 1 2.5-hr cl. Prereq: 695.17. Certificate upon completion of 695.17, 695.18, 695.19.

**695.19 AIDS: Community Response U G 3**

Sp Qtr. 1 2.5-hr cl. Prereq: 695.18. Certificate upon completion of 695.17, 695.18, 695.19.

**H696 Thesis Seminar U G 3**

Direction will be provided to facilitate honors students and MSW students at designing a thesis proposal.

Sp Qtr. 1 2.5-hr cl. Prereq: H521, H533, H571, or MSW major. Not open to students with credit for H694. Open only to soc work majors.

**697 Study at a Foreign Institution**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**697.01 Social Work in the Context of Social Development: Comparative Policy and Practice in India U G 5**

Emphasizes comparative social work practice and policy within a social development framework; addresses a variety of fields of practice: health, child welfare, and others.

Su Qtr. Arr. Prereq: Permission of instructor; concurrent enrollment required in International Studies 697 (Indian History, Society, and Culture). This is a Progress course. Course taught on location in South India (mostly Madras) as part of an International Education offering.

**697.02 Social Welfare in Eastern Europe: The Polish Experience U G 6**

Focus on social welfare policy and practice in Poland through lectures and visits to social service agencies in Cracow, Poland.

Su Qtr. Arr. This is a Progress course. Preference given to social work majors. Cross-listed with International Studies 697.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.



**H699 Honors Research U 3-12**

Research for Honors Thesis purpose only.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the soc work courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Social Work Honors committee. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

3-hr cl. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology.

**700.01 Seminar on Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.

Wi, Sp Qtrs. Repeatable to a maximum of 9 cr hrs.

**700.03 Ethical Issues U G 3**

Ethical issues of concern to the professions and arising out of the advanced technology: euthanasia, mind control, malpractice, and social responsibility of the professions.

Au Qtr. Repeatable to a maximum of 9 cr hrs.

**710 Women's Issues in Social Work P G 3**

Examination of relevant issues in the professional practice of social work. Su, Au, Wi Qtrs. 1 2.5-hr cl. Prereq: Grad standing.

**711 Race and Ethnicity in Social Work Practice P G 3**

An analytical approach to problems, needs, and intervention for effective social work practice with the oppressed target populations of Appalachians and Blacks.

Su, Au, Wi Qtrs. 1 2.5-hr cl. Prereq: Grad standing.

**713 Social Work Practice in the Schools G 3**

Examination of major issues in American schools, theoretical framework for social work services, delivery of services, models of school social work intervention, and intervention strategies.

Sp Qtr. 1 2.5-hr cl. Prereq: 745 or permission of instructor.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition and Food Management, Nursing, Psychology, and Speech and Hearing Science.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues U G 3**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. 1 2-hr cl. Not open to students with credit in 717.02 in any cross-listed areas.

**717.03 Developmental Disabilities U G 3**

Focus on the most pertinent scientific and societal issues of developmental disabilities.

Au Qtr. 1 3-hr cl. Not open to students with credit for 717.03 in any of the cross-listed areas.

**720 Social Welfare Policies and Programs I P G 3**

Historical and comparative analysis of social welfare systems; their relationship to change in the basic social institutions: family, church, government, and economic institutions.

Au Qtr. 1 2.5-hr cl. Prereq: Soc work grad standing or permission of instructor.

**721 Social Welfare Policies and Programs II P G 3**

The development and application of a conceptual model for social welfare policy and program analysis.

Wi Qtr. 1 2.5-hr cl. Prereq: 720.

**730 Seminars in Social Functioning P G 3-5**

Critical examination of personality, interactional, small group, organizational and community concepts and approaches used in social work analysis of social dysfunction.

Su, Sp Qtrs. 1 2.5-hr cl. Prereq: Soc work grad standing. Repeatable to a maximum of 9 cr hrs.

A— Institutional and Organizational Behavior

B— Psychopathology and Deviance

**733 Human Behavior and the Social Environment I P G 3**

Social work theories and concepts related to individuals and families as they develop over the life span; systems model provides a unifying framework.

Au Qtr. 1 2.5-hr cl. Prereq: Soc work grad standing or permission of instructor.

**734 Human Behavior and the Social Environment II P G 3**

Continues applying the social work systems and life span frameworks to extra-familial environments (i.e., groups, communities and cultures) that affect individual development and social functioning.

Wi Qtr. 1 2.5-hr cl. Prereq: 733.

**741 Clinical Practice**

Theory and methods of clinical social work practice with individuals, families, and groups; social work philosophy and values in the study of assessment, evaluation, and methods of intervention.

**741.02 Individuals P G 3**

Su, Au Qtrs. 1 2.5-hr cl. Prereq: 746 or 747.

**741.03 Conjoint Marital and Family Therapy P G 3**

Wi Qtr. 1 2.5-hr cl. Prereq: 746 or 747.

**741.04 Crisis Intervention P G 3**

Sp Qtr. 1 2.5-hr cl. Prereq: 746 or 747.

**741.05 Groups P G 3**

Au Qtr. 1 2.5-hr cl. Prereq: 746 or 747.

**741.09 Special Topics P G 2-5**

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 20 cr hrs.

**742 Administrative Aspects of Practice in Human Services Organizations**

Examines generic functions and processes of administration in relation to a conceptual framework for the management of human services professionals, based in a social work value orientation; application to public and voluntary social welfare/human services organizations.

**742.02 Staffing P G 3**

Au Qtr. 1 2.5-hr cl. Prereq: 746 or 747.

**742.04 Social Welfare Planning Methods P G 3**

Au Qtr. 1 2.5-hr cl. Prereq: 746 or 747.

**742.05 Financial Management P G 3**

Wi Qtr. 1 2.5-hr cl. Prereq: 746 or 747.

**742.06 Management Information Systems P G 3**

Wi Qtr. 1 2.5-hr cl. Prereq: 746 or 747.

**742.09 Special Topics P G 2-5**

Au, Wi, Sp Qtrs. Arr. Prereq: 744 and 745. Repeatable to a maximum of 20 cr hrs.

**743 Social Planning Aspects of Practice**

Concepts and strategies involved in the design, planning, implementation, monitoring, and evaluation of social delivery.

**743.03 Neighborhood and Community Development P G 3**

Sp Qtr. 1 2.5-hr cl. Prereq: 746.

**744 Social Work Practice Lab P G 2**

Didactic and experiential learning of generalist practice skills.

Au Qtr. 1 3-hr cl. Open only to social work major only of grad standing. This course is graded S/U.

**745 Practice and Profession I P G 3**

Assessment, planning and contracting with various levels of client systems within the context of the profession's commitment to an ecosystem perspective.

Wi Qtr. 1 2.5-hr cl. Prereq: 744.

**746 Practice and Profession II P G 3**

Intervention, evaluation and termination with various sized client systems within the context of the profession's commitment to an ecosystem perspective.

Sp Qtr. 1 2.5-hr cl. Prereq: 745. Open only to SWK majors.

**747 Graduate Integrative Practice Seminar P G 4**

Integrate knowledge from undergraduate practice foundation into a more advanced generalist practice framework using micro and macro case-based practice applications with attention given to populations-at-risk.

Su Qtr. 2 2-hr cl. Prereq: ASAP standing. Not open to students with credit for 744, 745 or 746.

**750 Social Welfare Policies and Programs**

Unique and specific aspects of social welfare policies and programs in selected fields of Social Work which augment Clinical and Social Planning/Administration concentrations.

Au, Wi Qtrs. 1 2.5-hr cl. Prereq: 721. Students may not register for more than a total of 9 cr hrs under this number; subdivisions not repeatable.

**750.01 Child and Family Services P G 3**

Understanding and application of the analytic model of social welfare policies and programs with special emphasis on the disadvantaged as applied to child and family social work practice.

**750.02 Aging P G 3**

Examination of social welfare policies affecting the elderly; identification of current and future issues and comparison of international, federal, state, and local programs.

**750.03 Health P G 3**

Analysis of social and economic policies and political forces which influence the delivery of health services and the role of social workers in health care.

**750.04 Mental Health P G 3**

Utilizing a social policy analytic framework; introduces social welfare policy issues and program organization.

**750.05 Mental Retardation and Developmental Disabilities P G 3**

Focuses on analysis of problems, policies, and programs which affect practice with the MR/DD population and their families.

**751 Social Work Practice**

Unique and specific aspects of social work practice in related fields and social work which augment clinical and social planning/administration concentrations.

Au, Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: 746. Students may not register for more than a total of 9 cr hrs under this number; subdivisions are not repeatable.

**751.01 Child and Family Services P G 3**

Develops advanced skills in dealing with problems of children and their families to assure protection and permanency through direct and indirect social work intervention.

**751.02 Aging P G 3**

Theoretical perspectives relevant to the aging process are examined; review of special concerns and treatment modalities unique to adults in middle and later years.

**751.03 Health P G 3**

Knowledge and skills for specialized social work practice in health; clinical, planning, and administrative roles in several subspecialties are addressed.

**751.04 Mental Health P G 3**

Provides knowledge and skills in clinical, and planning/administrative modes of practice in a range of mental health settings with selected target populations.

**751.05 Mental Retardation and Developmental Disabilities P G 3**

Provides advanced knowledge and skills of multiple social work roles in working with MR/DD clients and their families.

**770 Research Methods in Social Work P G 3**

Basic research methodology; the role of research in social work.

Su, Au Qtrs. 1 2.5-hr cl. Prereq: Soc work grad standing or permission of instructor.

**771 Data Analysis Designs P G 3**

Interpretation of social work data; quantitative techniques; designs of data analysis.

Su, Wi Qtrs. 1 2.5-hr cl. Prereq: Soc work grad standing or permission of instructor.

**772 Evaluation of Social Work Practice P G 3**

Utilization and selection of methodological techniques and applications for evaluating practice design and program effectiveness.

Su, Sp Qtrs. 1 2.5-hr cl. Prereq: 770 and 771. Not open to students with credit for 875.01 or 875.03.

**789 Field Practicum I P G 1-13**

Integration of field practice with social work practice theory.

Su, Au, Wi, Sp Qtrs. Prereq: 744 and 745; proof of liability insurance. Repeatable to a maximum of 15 cr hrs. Placement in assigned human service organization 2 days wky. Normally scheduled Wi and Sp Qtrs. Arr with student's faculty adviser. Open only to SWK majors. This course is graded S/U.

**793 Individual Studies P G 1-5**

Directed readings and tutorials related to specific problems.

Su, Au, Wi, Sp Qtrs. Prereq: Soc work grad standing, permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**794 Group Studies P G 1-4**

Group seminars in specialized areas of curriculum.

Su, Au, Wi, Sp Qtrs. Prereq: Soc work grad standing, permission of instructor. Repeatable to a maximum of 15 cr hrs.

**797 Interdepartmental Seminars U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Au, Wi, Sp Qtrs. Arr. Prereq: Permission of college secretary. Repeatable to a maximum of 9 cr hrs.

**889 Field Practicum II P G 1-15**

Designed to permit students to achieve greater autonomy and to maximize skill development in the integration of social work theory and practice.

Prereq: 789; proof of liability insurance. Repeatable to a maximum of 21 cr hrs. Placement 3 days wky Au, Wi, Sp Qtrs in a human service organization in accordance with student's primary mode of intervention. This course is graded S/U.

**894 Group Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: MSW or equiv with written permission of instructor. Repeatable to a maximum of 20 cr hrs. Not more than 10 hours shall be repeated in any one of the following areas.

A— Social Work Practice

B— Social Welfare Policy

C— Dynamics of Social Functioning

D— Other

**900 Theory Building**

Theory construction, elements of theory, knowledge-building, and general epistemological issues related to social work and social science theory on micro and macro levels.

Au, Wi Qtrs.

**900.01 Knowledge-Building in Social Science and Social Work Theory G 3**

Au Qtr. 1 3-hr cl. Prereq: PhD standing.

**900.02 Micro Theory: Theories of Individual Functioning G 3**

Wi Qtr. 1 3-hr cl. Prereq: 900.01.

**900.03 Macro Theory: Social Theory and Social Welfare G 3**

Wi Qtr. 1 3-hr cl. Prereq: 900.01.

**901 Social Work Research**

Quantitatively-oriented research methods, qualitatively-oriented research methods, computer literacy, and data processing skills.

Prereq: PhD standing; completion of research proficiency requirements; and written permission of the Director of the PhD Program.

**901.01 Quantitative Research Methods in Social Work G 3**

Au Qtr. 1 3-hr cl.

**901.02 Qualitative Research in Social Work G 3**

Au Qtr. 1 3-hr cl.

**901.03 Computer Literacy in Social Work G 3**

Sp Qtr. 1 3-hr cl. Prereq: 901.01; grad level stat course.

**902 Social Work Practice Theory**

Advanced courses in social work practice such as clinical practice administration and policy courses on social change, international social welfare, and social work education.

Au, Sp Qtrs. Prereq: PhD standing.

**902.01 Advanced Practice in Clinical Social Work G 5**

Au, Sp Qtrs. 1 5-hr cl. Repeatable to a maximum of 25 cr hrs.

**902.02 Advanced Practice in Social Work Policy and Administration G 5**

Au, Sp Qtrs. 1 5-hr cl. Repeatable to a maximum of 25 cr hrs.

**902.03 Current Issues in Social Work Education G 5**

Sp Qtr. 1 5-hr cl. Repeatable to a maximum of 25 cr hrs.

**902.04\* International Issues in Social Work Practice and Social Development G 5**

Sp Qtr. 1 5-hr cl. Prereq: PhD standing or permission of instructor. Repeatable to a maximum of 25 cr hrs. Alternates with 902.03 every other year.

**903 Proposal Development G 3**

Designed to help develop the dissertation proposal; present ideas, receive feedback, and defend proposal to students and faculty in an open forum.

Wi Qtr. 1 3-hr cl. Prereq: 2nd yr PhD standing.

**910 Introduction to Doctoral Studies G 1**

This course provides a foundation for successful doctoral study through interactions between students and faculty, defining standards for scholarly achievements, and fostering peer social support.

1 3-hr cl. Prereq: Doctoral standing. Enrollment limited to 1st yr PhD students in Social Work. This course is graded S/U.

**993 Individual Studies G 1-5**

Directed readings and tutorials related to specific problems and issues in following areas:

Su, Au, Wi, Sp Qtrs. Prereq: MSW or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

A— Social Work Practice

B— Social Welfare Policy

C— Dynamics of Social Functioning

D— Social Work Research

E— Social Work Education

F— Other

**998 Research in Social Work: Thesis G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research in Social Work: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Sociology

300 Bricker Hall, 190 North Oval Mall, 292-6681

General Prerequisites for Courses Numbered 700

Unless otherwise indicated, the prerequisites for 700-level courses are grad standing or permission of instructor.

General Prerequisites for Courses Numbered 800

Unless otherwise indicated, the prerequisites for 800-level courses are 30 qtr hrs in the same discipline at the 600 level or higher, of which 15 hrs must be at the 700 level.

### 101 Introductory Sociology U 5

Fundamental concepts of sociology and an introduction to the analysis of social problems.

Su, Au, Wi, Sp Qtrs. H101 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 201 or equiv or Rurl Soc 105 or equiv. GEC soc sci organizations and politics, and social diversity course. SS Admis Cond course.

### 202 Social Problems U 5

Analysis of contemporary social problems.

SS Admis Cond course.

### 209 Introduction to Criminal Justice U 5

Examination of the development and administration of criminal law and agencies (police, prosecutors, courts); emphasis on criminal proceedings and their justification.

Au, Wi, Sp Qtrs. 5 cl.

### 210 Sociological Aspects of Deviance U 5

Study of the definition, identification, treatment, and control of types of legal, moral and status deviance, such as crime, mental illness, alcoholism and other individual pathologies.

Au, Wi, Sp Qtrs. GEC soc sci individuals and groups course. SS Admis Cond course.

### 294 Group Studies U 3-5

Topics vary each quarter offered.

Prereq: 101. Repeatable to a maximum of 10 cr hrs.

### 298 Study Tour

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

#### 298.01 Domestic U 1-15

Repeatable.

#### 298.02 Foreign U 1-15

Repeatable.

### 302 Technology and Global Society U 5

Social aspects of technology, social change, and technological development; underdevelopment and the global economy.

### 306 Sociology of Poverty U 5

A study of low-income peoples, especially concerning the effect of poverty on them, and their consequent social participation.

Not open to students with credit for 206. GEC social diversity course. SS Admis Cond course.

### 320 Sociology of Education U 5

Current social trends as they affect education; backgrounds of school children, social status of teachers, role of power and bureaucracy.

Prereq: 5 cr hrs in sociol. SS Admis Cond course.

### 330^ Varieties of Modern Marriage U 5

Examination of sociological and social-psychological research describing and interpreting emerging pluralistic patterns of man-woman and parent-child relationships.

### 345 Contemporary American Society U 5

An exposition of the structural patterns of American society, using sociological theories and data but integrating them into a general view.

H345 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC soc sci organizations and politics course.

### 367 Second Writing Course

2 2-hr cl. GEC second writing courses.

#### H367.01 Politics and American Society U 5

Sociological analysis of American politics and society, emphasizing political elites and interest groups, and the changing role of the state in the economy.

Prereq: English 110 or 111 or equiv, 5 cr hrs of course work in polit sc or sociol, and soph standing. Not open to students with credit for 366.

#### 367.02 Cities and Urban Life U 5

The place of the city in social organization; the emergence, nature, and problems of modern urbanism; projects based on census and field data.

Prereq: English 110 or 111 or equiv, 5 cr hrs in sociol, and soph standing. Not open to students with credit for 280, 390, or 480.

#### H367.03 Work and Family in the United States U 5

Sociological examination of linkages between occupational and economic arrangements and marital and parental experiences in the United States.

Prereq: H100 or 101, English H110 or 111 or H111, honors eligibility, and soph standing.

### 370 Social Factors in Personality U 5

Analysis of relationships between social structure and personality; language; its consequences for social behavior; socialization; learning of motives and social roles; personality: development, organization, and disorganization.

Not open to students with credit for 470. GEC soc sci individuals and groups course.

### 380 American Ethnic Relations U 5

Survey of the attitudes and relationships arising from the contacts of various racial and ethnic groups in the United States.

Not open to students with credit for 280 or 480. GEC soc sci individuals and groups course. SS Admis Cond course.

### 382 Sociology of Asian American Life U 5

Introduction to Asian American life with attention to this group's social history, present status, and racial-ethnic relations.

GEC social diversity course.

### 391 The Community U 5

Development of the modern community; approaches to the study of communities; significance of processes and value systems for community organization and disorganization.

Not open to students with credit for 590.

### 405 Social Movements and Collective Behavior U 5

Contemporary social movements and collective behavior; their sources, issues, strategies, tactics, and impact on society.

Prereq: 5 cr hrs in sociol. Not open to students with credit for 605. GEC social diversity course.

### 407 Social Change U 5

Recent social changes, especially in Western civilization and the United States; types of societies in historical perspective; requirements of a good society.

Prereq: 5 cr hrs in sociol. Not open to students with credit for 207.

### 410 Criminology U 5

The nature and causes of crime and delinquency, criminal liability, criminal careers, and organized racketeering.

Au, Wi, Sp Qtrs. H410 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for Criminol 410.

### 430 Sociology of the Family U 5

Analysis of relationships between the family and the larger society including mate selection, status of women, and patterns of husband-wife and parent-child relationships.

Au, Wi, Sp Qtrs. Prereq: 5 cr hrs in sociol.

### 434 The Child and Society U 5

A study of the ways in which society socializes children; current breakdown in the socializing processes and implications for the school and other educational agencies.

Prereq: 5 cr hrs in sociol.

### 435 Sociology of Women U 5

Analysis of sex-roles and social structure with emphasis on modern social movements concerned with redefining sex-role relationships.

Prereq: 5 cr hrs in sociol. GEC social diversity course.

### 450 Illness and Social Behavior U 5

Study of cultural, social, psychological, and sociological factors in disease processes, distribution of disease, definition of illness, organization of health professions and facilities.

Prereq: 5 cr hrs in sociol.

**462 Sociology of Organizations U 5**

Functioning of large complex social groupings; goals, structures, coordination, dispersion, survival, change as seen in various organizations: e.g. governmental, educational, religious, business, and occupational organizations.

Prereq: 5 cr hrs in sociol. GEC soc sci organizations and politics course.

**463 Social Stratification U 5**

Class distinction as a phase of social differentiation; origin and characteristics of social class; significance for modern society of class consciousness, class struggle, and social mobility.

22-hr cl. Prereq: 5 cr hrs in sociol. GEC soc sci human, natural, and economic resources course.

**464 Sociology of Work U 5**

Analysis of work organization; control and authority relationships in the workplace; comparative studies of work and labor movements; industrial decline; automation.

Prereq: 5 cr hrs in sociol.

**465^ Work and Leisure in Mass Society U 4**

An analysis of current relationships between work and leisure, emphasizing social implications of increased leisure time and changing conceptions of work and leisure.

Prereq: 5 cr hrs in sociol.

**466 Sociology of Occupations and Labor Markets U 5**

Analysis of occupational differentiation; differences in work experience and outcomes across occupations; work within organizations; work and labor markets; race and sex differences in work.

Prereq: 5 hrs in sociol. GEC soc sci human, natural, and economic resources course.

**467 Sociology of Religion U 5**

The social role of religious institutions and beliefs, with particular reference to the United States; the relation between religion and other aspects of society.

Prereq: 5 cr hrs in sociol. GEC social diversity course.

**487 Types of Sociological Inquiry U 5**

Introduction to sociological research techniques, methodological approaches, and relevant quantitative procedures.

Au, Wi, Sp Qtrs. 2 1.5-hr cl, 2 1-hr labs. Prereq: Criminol or fm&hu dv or int stds or sociol major, and jr standing; or permission of instructor. Not open to students with credit for 250.

**488 Introduction to Sociological Theory U 5**

Introductory statement of the nature of sociological theory, its basic problems, assumptions, major types and orientations, and principal contributions to the discipline.

Au, Wi, Sp Qtrs. Prereq: 5 cr hrs in sociol.

**489 Internship Program in Sociology and Criminology U 1-5**

An opportunity for work experience and on-the-job learning in sociology and criminology related employment.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of the sociology department. Registration with department internship coordinator; minimum cumulative point-hour ratio of 2.5, sophomore standing or above, and completion of internship learning agreement with department internship coordinator, under whose supervision work is to be completed. Repeatable to a maximum of 15 cr hrs. Employment or experience through the Internship Program conducted under the supervision of the Soc/Crim Internship Coordinator. Journals required.

**498 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**498.01 Domestic U 1-15**

Repeatable.

**498.02 Foreign U 1-15**

Repeatable.

**501 East Asian Social Development U G 5**

Comparative analysis of social development experiences in China, Japan, Korea, and other East Asian newly industrializing societies.

Prereq: 487 and 488, or grad standing.

**502 West European Societies U G 5**

Major West European nations from 1945 to present; major social developments: economic reconstruction, decolonization, welfare, schools and universities, labor force and stratification, political parties.

Sp Qtr. 2 2-hr cl.

**503 Soviet and East European Societies U G 5**

Development and organization of political and social institutions, with emphasis on cross-national similarities and differences in the region.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 403.

**507 The Criminal Justice System U 5**

The role and operation of the criminal justice system: police, the courts and the legal system.

Prereq: 487 and 488, or grad standing.

**509 Sociology of Law U 5**

The relationship between law and social order emphasizing the structure of law, social origins of law and law as a source of social change.

2 2-hr cl. Prereq: 487 and 488, or grad standing. Not open to students with credit for 451.

**510 Women, Crime, and the Legal System U 5**

Analysis of females as participants in and victims of crime, the treatment of women in the criminal justice system, women as workers in criminal justice fields.

Prereq: 487 and 488, or grad standing.

**511 Sociology of Youth and Crime U G 5**

A sociological perspective on youth and crime; special attention to the magnitude of youth crime, theories, juvenile justice systems, and prevention and control efforts.

Prereq: 487 and 488, or grad standing.

**549 Quantitative Research Methods in Sociology U G 5**

An introduction to the application and interpretation of quantitative analysis in sociological research; emphasis on the description of social variables and hypothesis testing.

Au, Wi, Sp Qtrs. 2 1.5-hr cl and 2 1-hr labs. H549 offered Au Qtr. H549 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq for 549: 487. Prereq for H549: 487, Math 116 or equiv, and jr standing; or permission of instructor. Not open to students with credit for 650. GEC data analysis course.

**581 The American Jewish Community U G 5**

American Jewish life-styles and organizational patterns-Jewish history, demography, institutions, religious participation, politics, relationships with non-Jews, new movements and issues.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 281. SS Admis Cond course.

**589 Field Work in Sociology****589.01^ Sociology U 5**

Practicum in the collection of sociological data through field work; identification of research problem; development of data collection methods; data processing and analysis.

Prereq: 10 cr hrs in sociol and permission of instructor. Not open to students with credit for 589.

**589.02 Criminology and Criminal Justice U 5**

Practicum in criminology and/or the criminal justice system.

Au, Wi, Sp Qtrs. Prereq: 10 cr hrs in sociol or criminol and permission of instructor.

**597 Issues of the Contemporary World**

GEC courses.

**597.01 Contemporary World Societies: Social Institutions and Social Change U 5**

Sociological analysis of contemporary world societies-non-industrialized, industrializing, and industrialized-with special attention to major social institutions and patterns of social change.

Prereq: Sr standing. Not open to students with credit for 301.

**597.02 World Population Problems U 5**

General introduction to population studies, emphasizing how population growth and structure have caused or aggravated social problems in various countries. Au, Wi, Sp Qtrs.

Prereq: 5 cr hrs of social science course work, GEC data analysis requirement, and sr standing. Not open to students with credit for 313.

**H599 Research Seminar U 5**

Advanced research skills for honors sociology majors and honors criminology majors.

Sp Qtr. 2 2-hr cl. Prereq: 487, 488, and 549.

**601 Comparative Family Organization U G 5**

Analysis of family organizations in various societies, emphasizing the impact of changing world conditions on family and kinship structures.

Prereq: 487 and 488, or grad standing.

**606 Social Movements and Collective Behavior U G 5**

An examination of theories and research on non-traditional group efforts to change social systems and institutions; emphasis on contemporary societies and movements.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 710 or 805.

**608 Gender, Race, and Class in Mass Communications U G 5**

Sociological aspects of mass communications; emphasis on relationships among media, audience and social structure; examination of media culture and depiction of race, class, and gender.

Prereq: 487 and 488, or grad standing. GEC social diversity course.

**609 Neighborhoods and Crime U G 5**

Exploration of the social distribution of crime, with attention to the patterns and sources of neighborhood crime, and the impact of crime on fear of crime and on neighborhood decline.

Au Qtr. 2 2-hr cl. Prereq: 487 and 488, or grad standing.

**610 Sociology of Deviant Behavior U G 5**

An examination of the nature, types, and societal reactions to deviant behavior; special emphasis on the process of stigmatization and the emergence of deviant subcultures.

Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminol 610.

**611 Penology U G 5**

The treatment of adult offenders in detention and incarcerations; short and long term institutions.

Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminol 611.

**615 Control and Prevention of Crime and Delinquency U G 5**

Analysis of the operational effectiveness of special measures and programs pointed toward the control and prevention of crime and delinquency.

Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminol 615.

**618 Sociology of Police and Policing U G 5**

Sociological understanding of the origins of routine police conduct and misconduct; representative topics include police-citizen encounters and police abuse of discretion.

Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminol 618.

**623 Advanced Sociology of Education U G 5**

Comparisons of the structures and functions of educational systems, elementary through university; recruitment and allocation of personnel and resources, power, conflict, and boundary maintenance.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 523.

**629 Sociology of Health: Mental and Physical Dimensions U G 5**

Analysis of sociological and social psychological aspects of mental and physical disorders, and types of illness behavior associated with mental and physical illness.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 831.

**630 Medical Sociology U G 5**

Sociological analysis of the distribution of disease, and the nature of health care institutions, health professions and the delivery of health care services.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 730.

**635 Men in Society U G 5**

The social psychology of males, their relationships with females, other males, and society; emphasis on socialization, social roles, sexuality, etc.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 694.07 taken Au Qtr 1981, Au Qtr 1982, or Au Qtr 1983.

**640 Sociology of Everyday Life U G 5**

A basic course in ethnomethodology; a survey of the basic literature; study of the taken-for-granted, verbal and non-verbal features of social interaction; involves making observations and descriptions.

Prereq: 487 and 488, or grad standing.

**649 Principles of Multiple Regression U G 5**

Assumptions, principles, and applications of the multiple regression model in sociological practice; basic model, dummy variables, and special functional forms.

Prereq: 549 or 650 or equiv. Not open to students with credit for 884.09 Sp Qtr 1986.

**651 Approaches to Sociological Inquiry U G 5**

Theory and practice in essentials of the research process; comparison of alternative approaches and design models; questionnaire construction, interview techniques, and related problems.

Prereq: 649 or equiv, or permission of instructor.

**652 Sociological Survey Research Methods I U G 5**

Design of sociological survey research: question format, questionnaire design, alternative modes of administration, etc; hands-on practice in Computer Assisted Telephone Interviewing (CATI).

Prereq: 10 cr hrs in social or grad standing.

**653 Sociological Survey Research Methods II U G 5**

Administration and analysis of sociological surveys; emphasis on development, administration, and analysis of survey data.

Prereq: 652 or written permission of instructor.

**655 Sociology of Sport U G 5**

Sport from a sociological perspective: relationship of sport to social institutions; socialization into sport; stratification within sports; sport and small group analysis.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 555.

**660 Comparative Social Organization U G 5**

A comparative analysis of organizational characteristics and functioning in different cultural settings.

Prereq: 487 and 488, or grad standing.

**662 Small Groups U G 5**

Analysis of group structure and processes; examination of roles, interpersonal structure, leadership; observation of groups in laboratory and non-laboratory settings.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 661 or 772.

**663 Theories of Formal Organization U G 5**

Concepts and theories of formal social organization, including internal organizational structure, inter-organizational relations, and super-organization level structure.

Prereq: 487 and 488, or grad standing.

**664 Public Organizations U G 5**

Introduction to theory and research in public (government) organizations, exploration of behavior of these organizations, and examination of their role in the policy process.

Prereq: 487 and 488, or grad standing.

**666 Political Sociology U G 5**

Examination of structures, continuities, and processes of change; of models and building blocks; and of social contexts of power and dynamic forces altering political systems.

Prereq: 487 and 488, or grad standing.

**667\*\* Sociology of Elites U G 5**

Empirical studies of the "higher circles" in the United States; reviewing studies in the upper class, bourgeoisie, ruling class, and specialized elites.

Prereq: 487 and 488, or grad standing.

**670 Topics in Sociology U G 5**

Examination of selected current topics of interest to sociologists; topics vary by section and instructor.

Au Qtr. 2 2-hr cl. Prereq: 487 and 488, or grad standing. Repeatable to a maximum of 15 cr hrs.

**671 Population Studies I: Theory, Substance, and Techniques U G 5**

Survey of population studies covering sources of demographic data, mortality, and fertility.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 550.

**672 Population Studies II: Theory, Substance, and Techniques U G 5**

Continuation of survey of population studies covering models of population growth, population theories, migration, population estimations and projections, population problems, and policy decisions.

Prereq: 671 and Math 152 or equiv recommended. Not open to students with credit for 751.

**673 Topics in Criminology U G 5**

Examination of selected current topics of interest in crime and justice; topics vary by section and instructor.

Au Qtr. 2 2-hr cl. Prereq: 487 and 488, or grad standing. Repeatable to a maximum of 15 cr hrs.

A— Classification and Prediction in Criminology and Corrections

B— Social Aspects of Capital Punishment

**680 Sociology of Changing Life Styles U G 5**

An in-depth look at some emerging life style patterns, such as dual-career marriages, childless marriages, single-parent families, blended families, singlehood, cohabitation, etc.

Prereq: 487 and 488, or grad standing.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: 20 cr hrs in sociol, or grad standing and permission of instructor. Repeatable. This course is graded S/U.

**694 Group Studies**

Au, Wi, Sp Qtrs. Prereq: 487 and 488, or grad standing. Each decimal subdivision repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered.

**694.01 Sociological Theory U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.02 Social Organization U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.03 Medical Sociology U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.04 Criminology and Criminal Justice U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.05 Sociology of Education U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.06 Race/Ethnic/Minority Relations U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.07 Social Psychology U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.08 The Family U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.09 Research Methodology U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.10 Urban/Community/Ecology U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.11 Labor Markets/Economy and Society U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.12 Political Sociology U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.13 Population/Demography U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.14 Gender U G 3-5**

Repeatable to a maximum of 15 cr hrs.

**694.15 Unclassified U G 3-5****697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

General Prerequisites for Courses Numbered 700: Unless otherwise indicated, the prerequisites for 700-level courses are grad standing or permission of instructor. Repeatable.

**703 Advanced Single Equation Techniques G 5**

Techniques of analysis for examining nominally measured dependent variables, and treatment of error structures that are heteroskedastic or correlated across cases.

Prereq: 649, grad standing, or permission of instructor.

**704 Qualitative Methods in Sociology G 5**

A survey of qualitative approaches to social research, including participant observation, intensive interviewing, and archival/documentary analysis.

Prereq: Grad standing. Not open to students with credit for 648.

**705\* Construction and Verification of Theory G 5**

The actual practice of theory construction and its underlying logic.

Prereq: 487 or equiv, or grad standing, or permission of instructor. Not open to students with credit for 704.01. Repeatable to a maximum of 10 cr hrs.

**706 Experimental Research Methods U G 5**

Survey and analysis of research designs employing experimental methods to study human relations in various settings; business/industry, sports/recreation, home/family life, etc.

Prereq: Grad standing or permission of instructor.

**707 Multi-Equation Quantitative Models G 5**

A survey of advanced problems in the multivariate analysis of sociological data; topics covered include elaboration and specification, causal inference in nonexperimental research and path analysis.

Prereq: 549 or 650 or equiv, or grad standing. Not open to students with credit for 704.03. Repeatable to a maximum of 10 cr hrs.

**708 Problems in Qualitative Analysis G 5**

Problems and techniques of non-quantitative data analysis including case studies, participant observation, field diary, autobiography, and historical records.

Prereq: 648 or 704.

**709 Historical Sociology G 5**

Assessment of major studies in historical sociology by focusing on their internal logic, the supporting evidence, and the subsequent research.

Prereq: 648 or 704.

**710 Design and Analysis of Quantitative Sociological Research G 5**

Problem formulation, hypothesis testing, argumentation from data, and writing for professional audiences; research practicum leading to a research project.

Sp Qtr. Prereq: 651.

**711 Seminar on Sociology of Work G 5**

A survey of selected topics in sociology of workplace relations; control, administration, leadership, and occupations; theoretical approaches to the study of workplace relations.

Not open to students with credit for 811.

**718 Advanced Criminology G 5**

A critical study of the most important aspects of criminology.

Prereq: Grad standing or permission of instructor.

**720 Family, Work, and Inequality G 5**

Examination of recent research and theory in sociology of the family, with emphasis on the linkages among family, work, and inequality.

Prereq: Grad standing or permission of instructor.

**721 Macrosociological Perspectives and Research on Crime G 5**

Examination of structural crime theory and research focusing on the logic of macro-level inquiry, analysis of major theoretical frameworks and review of contemporary research.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**722 Microsociological Perspectives and Research on Crime G 5**

Examination of microsociological perspectives on the etiology of crime and delinquency providing a survey of the major theories and empirical research on the theories.

Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**735 Sociology of Gender G 5**

An examination of current theory and research on the sociology of gender through extensive readings.

Prereq: Grad standing or permission of instructor. Not open to students with credit for 602.

**742 Human Ecology G 5**

Analysis of problems of urban structure from the ecological perspective.

Not open to students with credit for 842.

**747 Theories of Social Change G 5**

Analysis of theoretical traditions in the study of social change, and methods of constructing synthetic theories of change.

Prereq: 682 or 782 or equiv.

**748 Comparative Methods in Sociology G 5**

Basic review of methods of comparative analysis as used in the study of social change.

Prereq: 651.

**752 Principles and Techniques of Scale Construction G 5**

Approaches and techniques in the development and testing of social measurement instruments.

Prereq: 549 or equiv or Soc Work 540.

**754 Demographic Analysis U G 5**

An exposition of census data and vital statistics, demographic rates, life tables, cohort analysis, and similar elementary techniques and data sources in demography.

Wi Qtr. 5 cl. Prereq: 1 course in general statistics. Not open to students with credit for 619.

**755 The Social Context of Human Fertility G 5**

A critical and methodological analysis of fertility, with special emphasis on the social context of reproductive behavior in American society.

**756 Migration and Social Mobility G 5**

Theories and models of population mobility; determinants and consequences of the migration process; policy implications of rural-urban migration.

**757 Seminar on the Life Course G 5**

Introduction to the life course as a theoretical orientation, methodology, and field of study within sociology.

Prereq: Grad standing or permission of instructor.

**758 Population, Health, and Life Course G 5**

Social and demographic forces that affect well being, health, and survival. Sp Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**760 International Inequality and Underdevelopment G 5**

Sociological theories of development and research on issues in comparative development in the global system.

Prereq: 10 cr hrs in sociol or grad standing.

**761 Social Stratification G 5**

A survey of major theories, issues, and empirical literature on societal stratification and inequality with particular focus on the United States.

Not open to students with credit for 861.

**762\* Comparative Social Inequality G 5**

Using historical and cross-national approaches, two aspects of social inequality are examined: class relations and the distribution of goods.

**766 Advanced Sociology of Labor Markets and Occupations G 5**

Theory and research covering labor market segmentation; occupational and organizational perspectives on markets; work authority and local markets; markets as structures; market effects on worker outcomes.

**770 Individual in Society G 5**

Analysis and synthesis of the major theories and findings of social psychology.

**771 Symbolic Interaction G 5**

Analysis of the relationship between the individual and the social structure; particular reference paid to the symbolic interaction orientation.

**777 Comparative Political Economy G 5**

The comparative analysis of the state in contemporary economic systems: the politics of economic policies; the welfare state; and industrial development policies.

**780 Racial and Ethnic Differentiation G 5**

An analysis of the origin, persistence, adaptation and change of systems and racial and ethnic differentiation.

**782 Earlier Developments in Sociological Theory G 5**

Analysis of classical systems and their representatives, e.g., positivistic social evolutionism (Compte, Spencer, Durkheim), historical materialism (Marx-Engels), and humanistic idealistic reactions (Toennies, Simmel, M. Weber).

Prereq: Grad standing. Not open to students with credit for 682.

**H783 Honors Research**

A conference-thesis course; subject matter will vary depending upon the student's topic.

Su, Au, Wi, Sp Qtrs. Arr.

**H783.01 Sociology U 1-5**

Prereq: 4th yr standing with a grade of A in at least half of the social courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 10 cr hrs. At least 2 qtrs are required of candidates for the degree BA with distinction in sociol. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in H783. This course is graded S/U.

**H783.02 Criminology and Criminal Justice U 1-5**

Prereq: 4th yr standing with a grade of A in at least half of the criminol and/or sociol courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 10 cr hrs. At least 2 qtrs are required of candidates for the degree BA with distinction in criminol. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in Criminol H783. This course is graded S/U.

**784 Later Developments in Sociological Theory G 5**

Analysis of systematic orientations, e.g., social action (Znaniecki, Maclver, Parsons), functionalism (Parsons, Merton), conflict (Dahrendorf, Coser), social exchange (Blau), ethnomethodology (Garfinkel), newer structuralism. Prereq: Grad standing. Not open to students with credit for 683.

**790 Social Organization of the Community G 5**

An examination of the nature, structures, processes, and trends of social organization of modern communities.

**791 Sociological Methods of Community Analysis U G 5**

Methods, techniques, sources of data, and objectives of community analysis.

Sp Qtr.

**792 Structural Sociology G 5**

Key concepts, issues, recent trends in the study of social structure with special emphasis on formal social organizations, social stratification, comparative social systems, groups and research methods.

Au Qtr. 5 cl. Prereq: Grad standing in sociol.

**800 Proseminar in Sociology G 2**

Each week an area of specialization within sociology will be discussed by a professor whose major interest is in that area; provides an overview of special topics and current issues.

Repeatable to a maximum of 6 cr hrs. Open only to 1st year grad students in sociol. This course is graded S/U.

**802 Teaching Sociology G 3**

Designed to prepare sociology graduate students to teach independent sections of basic sociology classes.

Sp Qtr. 1 3-hr cl. Prereq: Grad standing in sociol or permission of instructor. This course is graded S/U.

**820\* Seminar in the Sociology of Education G 5**

Special problems will be considered in different quarters, including urban education, student movements, bureaucratic-professional problems, school-community relations, and innovation.

Repeatable to a maximum of 10 cr hrs.

**830 Seminar in Medical Sociology: Problems in the Sociology of Health Organization G 5**

Analysis of theory and research bearing upon the role of medicine in society and the health organizations on national, community, and institutional levels.

**837 Seminar in Political Sociology G 5**

Selected topics in political sociology.

Prereq: Grad standing or permission of instructor.

**841 Sociology of Urban Sub-Communities G 5**

Examination of society and culture of sub-communities such as ethnic and racial ghettos, suburbia; generalization about the patterns of integration with larger systems.

**848\* Seminar in the Sociology of Religion G 5**

An analysis of selected contemporary problems in the sociology of religion; religious organization and involvement.

**850 Seminar in Sociological Research Methods G 1-5**

Special topic seminars in research methodology.

Repeatable to a maximum of 30 cr hrs.

**859 Practicum in Sociological Research G 1-15**

Supervised practical experience in the independent execution of sociological research, the application of appropriate analytical techniques, and preparation of research reports.

Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**862\* Seminar in Complex Organizations G 5**

Analysis of bureaucratization, structure, boundary problems, resource allocation, organizational change and conflict.

**864\* Seminar: Organizational Environments G 5**

Theory and analysis of organization-environment relations, inter-organizational relations, and the structure of social environments.

Prereq: 663 or equiv.

**882\* Systematic Social Theory in Progress G 5**

Examination of the logical structure and empirical status of current and emerging theories.

**884 Seminars in Sociology**

Su, Au, Wi, Sp Qtrs.

**884.01 Sociological Theory G 1-5**

Repeatable to a maximum of 15 cr hrs.



- 884.02 Social Organization and Planning G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.03 Medical Sociology G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.04 Criminology and Criminal Justice G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.06 Race/Ethnic/Minority Relations G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.07 Social Psychology G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.08 The Family G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.09 Research Methodology G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.11 Labor Markets/Economy and Society G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.12 Political Sociology G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.13 Population/Demography G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.14 Gender G 1-5**  
Repeatable to a maximum of 15 cr hrs.
- 884.15 Unclassified G 1-15**  
Repeatable to a maximum of 15 cr hrs.

**888\* Seminar in the American Family G 1-5**  
An examination of relevant issues, trends, and problems with emphasis on theoretical orientations and research findings.  
Repeatable to a maximum of 5 cr hrs.

**998 Research in Sociology: Thesis G 1-18**  
Research for thesis purposes only.  
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research in Sociology: Dissertation**  
Research for dissertation purposes only.  
Su, Au, Wi, Sp Qtrs.

- 999.04 Criminology and Criminal Justice G 1-18**  
Repeatable. This course is graded S/U.
- 999.06 Race/Ethnic/Minority Relations G 1-18**  
Repeatable. This course is graded S/U.
- 999.10 Urban/Community/Ecology G 1-18**  
Repeatable. This course is graded S/U.
- 999.11 Labor Markets/Economy/Society G 1-18**  
Repeatable. This course is graded S/U.
- 999.12 Political Sociology G 1-18**  
Repeatable. This course is graded S/U.
- 999.13 Population/Demography G 1-18**  
Repeatable. This course is graded S/U.
- 999.14 Gender G 1-18**  
Repeatable. This course is graded S/U.
- 999.15 Unclassified G 1-18**  
Repeatable. This course is graded S/U.

## Soil Science

210 Kottman Hall, 2021 Coffey Road, 292-2265

### 300 Soil Science

Prereq: Chem 101 or 121. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

- 300.01 Soil Science U 3**  
Introduction to soil physical, chemical, and biological properties related to land use, environmental quality, and crop production.  
Au, Wi Qtrs. 3 cl. Not open to students with credit for Agronomy 240.
- 300.02 Soil Science Laboratory U 2**  
Observation and quantitative determination of soil properties.  
Au, Wi Qtrs. 1 cl, 1 2-hr lab. Prereq or concur, 300.01 Not open to students with credit for Agronomy 240.

### 442 Soil Management U 5

A consideration of the necessity for conserving our soil resource. Emphasis on processes active in erosion and management practice to sustain productivity and maintain environmental quality.  
Wi Qtr. 5 cl. Prereq: 300.01 or Agronomy 240. Not open to students with credit for Agronomy 442.

### 494 Group Studies U 3-5

Selected topics in soil science.  
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

### 540 Urban and Sports Turf Soils U G 3

Soil science relevant to urban use, including problems associated with urban soil, urban and sports turf soil design, and playability of sports turf soils.  
Sp Qtr. 3 cl. Prereq: 300.01 or Agronomy 240 or permission of instructor. Not open to students with credit for Agronomy 540.

### 550 Pedology U G 5

A comprehensive examination of soil morphology, study and application of soil taxonomy, processes active in soil formation, and distribution of soil classes over the earth's surface.  
Sp Qtr. 3 cl, 1 2-hr lab and field trips. Prereq: 300.01 and 300.02 or Agronomy 240. Not open to students with credit for Agronomy 550.

### 580 Soil Fertility

#### 580.01 Soil Fertility and Fertilizers U G 3

Principles of soil fertility, plant nutrition, and fertilizer management; environmental considerations and low input concepts in soil fertility.  
Wi Qtr. 3 cl. Prereq: 300.01 or Agronomy 240. Not open to students with credit for Agronomy 580.01.

### 593 Individual Studies U G 3,5

Special problems in soil science not included in regular courses.  
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 643 Soils of the Tropics U G 3

Review of soil resources of the tropics and their management based on climate, vegetation, soil types and their geographic distribution, soil properties, traditional and improved soil management systems.  
Au Qtr. 3 cl. Prereq: 300.01 or Agronomy 240. Not open to students with credit for Agronomy 643.

### 650\* Advanced Soil Classification Morphology and Genesis U G 5

Theory and principles of soil classification schemes emphasizing the 7th Approximation; classification and genesis of major soils of the world; methods to establish parent material homogeneity and indices of soil weathering.  
Wi Qtr. 4 cl, 1 2-lab; and 3 2-hr labs or 1-day field trips per qtr. Prereq: 550 or Agronomy 550 and 10 cr hrs from the following: Soil Sci 442 or Agronomy 442, Geol Sci 550, 650. Not open to students with credit for Agronomy 650.

### 671 Soil Physics U G 5

A study of the physical makeup and properties of soil, including structure, thermal relationships, consistency, plasticity, water, and their relationships.  
Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 442 or Agronomy 442, Physics 131, Math 151. Not open to students with credit for Agronomy 671.

### 680 Soil Chemistry U G 5

Introduction to chemical processes in soils and their application in nutrient cycling, plant nutrition waste disposal, acid rain, fate of pesticides, and heavy metals.  
Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 300.01 and 300.02 or Agronomy 240 and Chem 123. Not open to students with credit for Agronomy 680.

### 682 Soil Ecology U G 5

Examines the ecological relationships between soil organisms and their biotic and abiotic environment, with emphasis on the role of soil organisms in biogeochemical cycling.  
Sp Qtr. 2 1.5-hr cl, 1 4-hr lab. Prereq: 300.01, Chem 122, Biology 114, or permission of instructor.

### 693 Individual Studies U G 3,5

Special problems in soil science not included in regular courses.  
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 CPRH and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 694 Group Studies U G 1-5

Discussion of selected topics in soil science.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

### 750\* Soil Mineralogy U G 5

Theory and application of methods for analyzing minerals in soil environments, including X-ray, thin section, electron optical, thermal, and wet chemical techniques.  
Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 15 cr hrs selected from: 300.01 or Agronomy 240, 550 or Agronomy 550, 680 or Agronomy 680, Geol Sci 121, 212, 621, 637, Chem 121-123, 211. Not open to students with credit for Agronomy 750.

**760 Soil Biochemistry U G 4**

Soil biochemical techniques, elemental transformations, biologically active compounds, pesticide metabolism, and fate of genetic materials in soils. Sp Qtr. 2-2-hr cl. Prereq: 300.01 or Agronomy 240, Chem 231, Biochem 511. Not open to students with credit for Agronomy 760.

**772 Thermodynamics of Soil Solution**

Wi Qtr.

**772.01 Chemical Equilibria and Kinetics in Soils U G 3**

A study of the thermodynamics of precipitation-dissolution, electrochemical, and ion-exchange reactions in soils and sediments.

3 cl. Prereq: Physical chemistry or permission of instructor. Not open to students with credit for Agronomy 772.01.

**772.02 Thermodynamics and Kinetics of Soil Solutions: Laboratory U G 2**

An experimental approach to thermodynamics of soil solutions.

2 3-hr lab. Prereq or concur: 772.01 or Agronomy 772.01 or permission of instructor. Not open to students with credit for Agronomy 772.02.

**871<sup>A\*</sup> Advanced Soil Physics G 3**

Moisture, gaseous, and thermal processes and regimes in vegetated soils and their influences on plant growth.

Wi Qtr. 3 cl. Prereq: 671 or Agronomy 671 and permission of instructor. Not open to students with credit for Agronomy 871.

**872<sup>\*</sup> Surface and Colloid Chemistry of Soils G 3**

A study of the surface and colloid chemistries of soils, sediments, and reference mineral systems.

Wi Qtr. 2 1.5-hr cl. Prereq: 772.01 or 772.02 or Agronomy 772.01 or Agronomy 772.02 or permission of instructor. Not open to students with credit for Agronomy 872.

**880 Soil and Water Science Seminar G 1**

Discussion of current problems in soil science.

Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**993 Individual Studies**

Special problems in soil science not included in regular courses.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

**993.01 Soil Science Instruction G 3,5**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**993.02 Special Problems G 3,5**

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Spanish

266 Cunz Hall, 1841 Millikin Road, 292-4958

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 102.01, etc.) and then move on to more advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

As a prerequisite to entry into the major, as well as to all undergraduate courses at the 400-level and above, students must pass the Spanish Listening and Reading Proficiency Exam (SLRPE). This test is administered once a quarter.

Spanish 102-201, 250, and 401-403 are offered through The Ohio State University Elementary Spanish Language Program every Au, Wi, and Sp Qtrs in Cuernavaca, Morelos, Mexico; and every Su Qtr in Quito, Ecuador.

Information concerning frequency and quarter(s) of offering and prerequisites may be obtained by contacting the department.

**100 Spanish for Communication U 3**

Designed for students who wish to refresh or recover oral Spanish skills, or for highly-motivated students who have never studied Spanish and wish to develop basic survival Spanish skills.

Su, Au, Wi, Sp Qtrs. 2 72-min cl. Not open to Spanish majors and minors or students with credit for Spanish 101 or above, except for Spanish 150 and 151.

**101 Elementary Spanish I**

Introduction to Spanish; development of listening, reading, speaking, and writing skills.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Students must register for and complete 5 cr hrs during the qtr.

This course is available for EM credit.

**102 Elementary Spanish II**

Continued study of Spanish; development of listening, reading, speaking and writing skills.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Prereq: 101.01. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.66 Intensive Spanish for Review I U 5**

Intensive review of basic vocabulary, structures, and skills needed for entry into 103.

2 2-hr cl and 1-hr cptr lab. Prereq: 2 or more years of high school Spanish and placement at 101 level. Not open to native speakers of Spanish through regular course enrollment or EM credit, or to students with credit for 101.01 or 102.01.

**103 Intermediate Spanish I**

Continued study of Spanish; development of listening, reading, speaking, and writing skills; readings based on Spanish culture and literature.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

**103.01 Classroom Track U 5**

Prereq: 102.01 or 110. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**103.66 Intensive Spanish for Review II U 5**

2 2-hr cl and 1-hr cptr lab. Prereq: 101.01 or 5 cr hrs of 101.51, or 3 or more yrs of high school Spanish and placement into 102 by placement exam. Not open to native speakers of Spanish through regular course enrollment or EM credit, or to students with credit for 102.01, 102.66, or 103.01.

**104 Intermediate Spanish II U 5**

Reading of Spanish short stories, plays, and novels with attention to literary appreciation; development of basic language skills.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 103.01 or 103.66 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit; or to students with credit for 104. This course is available for EM credit. GEC for lang course.

**H104 Honors Intermediate Spanish II U 5**

Intensive, intermediate Spanish for potential Spanish majors, minors, and highly-motivated students in other areas of study; emphasis on development of proficiency in speaking and writing Spanish and knowledge of Hispanic cultures.

Au, Sp Qtrs. 5 cl. Prereq: 103.01 or 103.66 or equiv, and permission of dept. Not open to native speakers of this language through regular course enrollment or to students with credit for 104. Upon successful completion of H104, students may enroll in 401. GEC for lang course.

**110 Intensive Elementary Spanish U 5,10**

Intensive introduction to Spanish grammar, vocabulary, listening, speaking, reading, and writing; equivalent to 101.01 and 102.01.

Su, Au, Wi, Sp Qtrs. 10 cl. Prereq: Permission of dept. Not open to students with credit for 102 or to native speakers of Spanish through regular course enrollment or EM credit. Students with credit for 101 or the equiv may not register for more than 5 cr hrs. GEC for lang course.

**111 Intensive Intermediate Spanish U 5,10**

An intensive course that combines the content of 103 and 104; continuing study of Spanish grammar vocabulary, listening, speaking, reading, and writing.

Su, Au, Wi, Sp Qtrs. 5 2-hr cl. Prereq: 110 or 102.01, or 102.66, or equiv with written permission of instructor. Not open to students with credit for 104 or 104 decimal subdivisions; or to native speakers of Spanish through regular course enrollment or EM credit. Students with credit for 103.01 may not register for more than 5 cr hrs. GEC for lang course.

**150 Culture and Literature of Spain U 5**

Introduction to the principal developments of the culture of Spain through literature, art, music, film, and folklore.

22-hr cl, 1 1-hr rec. Taught in English. GEC arts and hums cultures and ideas course.

**151 Introduction to Latin American Culture and Literature U 5**

Introduction to the culture of Spanish America and Brazil through literature, art, music, film, and folklore.

2 2-hr cl. 1 1-hr rec. Taught in English. GEC arts and hums cultures and ideas course.

**201 Intermediate Spanish Communication Skills U 5**

Intensive practice in oral and written Spanish, based on literary and periodical texts.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 104 or 111. Not open to native speakers of Spanish through regular course enrollment or EM credit. This course is available for EM credit.

**250 Fact and Fiction: A Reading Course in Spanish U 4**

Reading strategies and reading practice based on authentic Spanish texts, both journalistic and literary.

2 2-hr cl. Prereq: 104 or 111.

**293 Individual Studies U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-15**

Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

**302 Spanish Conversation U 3**

Practice in speaking Spanish: vocabulary building, basic syntactic structures, pronunciation.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 201 or permission of instructor. Not open to students with credit for 402 or 802; or to native speakers of Spanish through regular course enrollment or EM credit.

**320 Don Quixote in Translation U 5**

Introductory critical reading of Don Quixote in English.

2 2-hr cl. Credit does not count toward a major in Spanish. Taught in English. GEC arts and hums lit course.

**321 The Spanish Don Juan Theme in the Theatre U 5**

Introduction to the Don Juan theme from its origins in Renaissance Spain, through different versions, to the 20th century.

2 2-hr cl. Credit does not apply toward a major in Spanish. Taught in English. GEC arts and hums lit course.

**322 Spanish Society and the Arts U 5**

Introduction to Spanish art and its relationship to society, from Goya to Toral: a visual approach to culture.

2 2-hr cl. Taught in English. GEC arts and hums VPA course.

**330 Reinventing America U 5**

Introduction to visual and verbal representation of Latin American multi-ethnic cultures through literature and visual arts; emphasis on construction of American identities and nations.

2 2-hr cl. Credit does not count toward a major in Spanish. Taught in English. GEC arts and hums VPA course.

**331 Caribbean Cultures U 5**

The analysis of Caribbean societies and cultures; analysis of texts to unravel the cultural processes of creolite, negritude, cannibalism.

2 2-hr cl.

**395 Topics in Foreign Study U 1-15**

Credit from study abroad for courses not offered by department.

Su, Au, Wi, Sp Qtrs. Arr. Used only to convert 697 credit to more appropriate level. Repeatable to a maximum of 15 cr hrs. Not applicable to Spanish major or minor. Arranged only with permission of departmental study abroad adviser.

**401 Review Grammar U 4**

Review of major grammatical principles, with extensive oral and written practice.

Su Term 1, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 201, H104 or permission of instructor.

**403 Intermediate Spanish Composition U 4**

Spanish prose forms and practice in writing descriptive, narrative, and expository compositions.

Au, Wi, Sp Qtrs. 2 2-hr cl. H403 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 401. Not open to native speakers of Spanish through regular course enrollment or EM credit.

**404 Spanish Pronunciation U 3**

Practice with corrective exercises; some attention to problems of teaching pronunciation.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 250. Not open to students with native pronunciation.

**406 Intermediate Business Spanish U 5**

An introduction to business Spanish with emphasis on business terminology, commercial transactions, and international procedures.

2 2-hr cl. Prereq: 403. Taught in Spanish.

**430 Introduction to Spanish Linguistics U 5**

Introduction to the analysis of Spanish from the perspective of modern linguistic theory.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 401 and 404.

**450 Introduction to the Study of Literature and Culture in Spanish: Reading Texts U 4**

Strategies for reading literary and cultural texts from Spain and Spanish America.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H450 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 403.

**536 Language Change in Spanish U G 5**

Historical development of the Spanish language, including details of phonological, morphosyntactic, and semantic changes; external history; and changes currently in progress.

Au Qtr. 2 2-hr cl. Prereq: 430.

**551 Masterpieces of Spanish Golden Age Literature U G 5**

Introductory critical study of major literary works from the 16th and 17th centuries in Spain.

2 2-hr cl. Prereq: 450.

**552 Masterpieces of Modern Spanish Literature U G 5**

Introductory critical study of major literary works from the 19th and 20th centuries in Spain.

2 2-hr cl. Prereq: 450.

**555 Indigenous and Colonial Literatures of Spanish America U G 5**

Introductory critical study of issues and processes in the formation of indigenous and colonial expression through 19th century regional discourses.

2 2-hr cl. Prereq: 450.

**556 Modern Spanish American Literature U G 5**

Introductory critical study of issues and processes in Spanish American writing from Modernism through the 20th century.

2 2-hr cl. Prereq: 450.

**557 Survey of Latino/a Literature in the U.S. U 5**

Introductory critical study of authors, topics, and movements in Latino/a literature from the late 19th century to the present.

2 2-hr cl. Prereq: 450.

**560 Introduction to Spanish American Culture U G 5**

Major elements in the culture of the peoples of Spanish America.

2 2-hr cl. H560 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 450.

**561 Introduction to the Culture of Spain U G 5**

Major developments in the culture of Spain.

2 2-hr cl. H561 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 450.

**580 Latin American Film U G 5**

Study of Latin American film; special attention is paid to the relationship between film and the society in which it is produced.

Wi Qtr. 2 2-hr cl. Prereq: 450.

**581 Spanish Film U G 5**

Study of Spanish film; special attention is paid to the relationship between film and the society in which it is produced.

2 2-hr cl. Prereq: 450.

**595 Special Topics in Foreign Study U 1-15**

Credit from study abroad for courses not offered by department but eligible for Spanish major core.

Su, Au, Wi, Sp Qtrs. Arr. Used only to convert 697 credit to more appropriate level. Repeatable to a maximum of 15 cr hrs. Arranged only with permission of departmental study abroad adviser.

**601 Modern Spanish Syntax U G 5**

Study of modern Spanish grammar; modern tendencies in syntactic analysis.

5 cl. Prereq: 430.

**603 Advanced Spanish Composition U G 5**

Analysis of different prose styles and practice in writing fluent Spanish compositions.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 450 and jr or sr standing. GEC third writing course.

**604 Spanish Phonetics U G 5**

Analysis of the phonological structure of Spanish and a comparison with English; practical problems of teaching pronunciation.  
2 2-hr cl. Prereq: 430.

**606 Advanced Business Spanish U G 5**

An in-depth study of the Hispanic economic, social, and cultural environment as it relates to business.  
2 2-hr cl. Prereq: 406 or permission of instructor.

**610 Contrastive Structures of Spanish and English U G 5**

Phonetics, phonemics, morphology, and syntax of Spanish contrasted with English.  
2 2-hr cl. Prereq: 430.

**613 Advanced Spanish Composition for Native Speakers U G 5**

Development of the ability to organize and express ideas in written Spanish; cultural component.  
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Several courses in Spanish grammar in the U.S. or in a Spanish-speaking country. Not open to students studying Spanish as a second ("foreign") language. Designed for students of Hispanic culture or heritage who have no serious problems with spoken Spanish but who need further practice writing.

**630 Senior Seminar in Spanish Linguistics U G 5**

Intensive study of a major topic in Hispanic linguistics; topic varies, for example: the Spanish pronominal system, American Spanish dialectology, Spanish orthography.  
Au Qtr. 2 2-hr cl. Prereq: Any two of 536, 601, 604, 610. Repeatable to a maximum of 15 cr hrs.

**650 Senior Seminar in Spanish or Spanish American Literature U G 5**

Intensive study of a major author, literary work, or theme; topic varies, for example: Cervantes, Spanish literature of the Civil War, novels of the Mexican Revolution.  
2 2-hr cl. Prereq: One of 551, 552, 555, 556, or 557; and one of 560, 561, or 603. Repeatable to a maximum of 15 cr hrs. Required for Spanish majors.

**660 Senior Seminar in Hispanic Culture U G 5**

Intensive study of a major theme or problem in Hispanic culture; topic varies, for example: Post-Franco Spain, Latin American Revolutionary thought.  
2 2-hr cl. Prereq: One of 551, 552, 555, 556, or 557; and one of 560, 561, or 603. Repeatable to a maximum of 15 cr hrs.

**H680 Honors Seminar U 5**

Intensive study of major topics in Hispanic literature, culture or linguistics, with emphasis on developing research skills; topic varies.  
Sp Qtr. 2 2-hr cl. Prereq: 603, honors major in Spanish, and permission of dept. Repeatable to a maximum of 15 cr hrs. Required for Honors majors in Spanish.

**689 Spanish in Ohio: An Experiential Course for Selected Majors U G 5**

Interaction with Hispanic communities in Ohio; intensive and extensive practice with Spanish as spoken by native speakers from the U.S. and abroad.  
1 3-hr cl, plus 100 field contact hours outside class. Prereq: 560 or 561 and permission of instructor. Not open to native Spanish speakers unless their secondary education was completed in the United States. Students will pay travel costs, if required.

**693 Individual Studies U G 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**702 Introduction to Literary Analysis U G 5**

Literary criticism and methods of discourse analysis; emphasis on application of critical concepts.  
Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Intended for beginning grad students; may be taken by advanced undergraduates with permission of instructor.

**703 Research Methods and Design G 5**

Introduction to research methods and design in Hispanic literatures and cultures.  
Sp Qtr. 2 2-hr cl. Prereq: Grad standing.

**730 Introduction to Spanish Linguistics U G 5**

A broad introduction to Spanish linguistics: survey of Spanish data as they relate to phonological, morphological, syntactic, and semantic analysis, historical development, and sociolinguistic variations.  
Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**732 Spanish Syntax and Semantics G 5**

Introduction to structural and semantic characteristics of Spanish in the light of recent theoretical frameworks in linguistics.  
Wi Qtr. 2 2-hr cl. Prereq: 730 or permission of instructor.

**734 Spanish Phonology and Morphology G 5**

Introduction to phonological and morphological characteristics of Spanish in the light of recent theoretical frameworks in linguistics.  
Wi Qtr. 2 2-hr cl. Prereq: 730 or permission of instructor.

**736 History of the Spanish Language U G 5**

Basic concepts of historical linguistics: the major factors of change in the history of the Spanish language from Latin to the present.  
Au Qtr. 2 2-hr cl. Prereq: 730 or permission of instructor.

**738 Spanish Sociolinguistics G 5**

Introduction to the analysis of linguistic and social factors which contribute to variation in modern Spanish.  
2 2-hr cl. Prereq: 730 or permission of instructor.

**739 Introduction to Medieval Spanish U G 2**

Introduction to Medieval Spanish sounds, forms, constructions, and vocabulary, based on reading and linguistic comment of representative texts.  
1 2-hr cl. Prereq: 404 and 601, or permission of instructor.

**751 Studies in Medieval Spanish Literature U G 5**

In-depth study of a major topic or problem in Medieval Spanish literature.  
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

**752 Studies in Spanish Golden Age Literature U G 5**

In-depth study of a major topic or problem in Spanish Golden Age literature.  
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

**753 Studies in Spanish Literature of the 18th and 19th Centuries U G 5**

In-depth study of a major topic or problem in 18th or 19th century Spanish literature.  
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

**754 Studies in 20th Century Spanish Literature U G 5**

In-depth study of a major topic or problem in 20th century Spanish literature.  
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

**755 Studies in Indigenous and Colonial Spanish American Literature U G 5**

In-depth study of a major topic or problem in indigenous and colonial Spanish American literature.  
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

**756 Studies in Independence and 19th Century Spanish American Literature U G 5**

In-depth study of a major topic or problem in Spanish American literature of the independence period and the 19th century.  
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

**757 Studies in Modern Spanish American Literature U G 5**

In-depth study of a major topic or problem in Spanish American literature of the modern period from approximately 1880 to 1950.  
2 2-hr cl. Prereq: 650 or grad standing; permission of instructor required of undergrads. Repeatable to a maximum of 20 cr hrs.

**758 Studies in Contemporary Spanish American Literature U G 5**

In-depth study of a major topic or problem in contemporary Spanish American literature.  
2 2-hr cl. Prereq: 650 or grad standing; permission of instructor required of undergrads. Repeatable to a maximum of 20 cr hrs.

**759 Comparative Topics in Iberian and Latin American Literature U G 5**

In-depth study of a major topic comparing Spanish, Spanish American and/or Luso-Brazilian literature.  
2 2-hr cl. Prereq: 650 or grad standing; permission of instructor required of undergrads. Repeatable to a maximum of 20 cr hrs.

**760 Topics in Spanish American Culture and Civilization U G 5**

Analysis of Spanish American culture through the study of selected topics in literature, film, and the arts; topics vary.

2 2-hr cl. Prereq: 560 or permission of instructor. Repeatable to a maximum of 15 cr hrs. Open only to grad students and to srs majoring in Spanish by permission of instructor.

**761 Topics in Spanish Culture and Civilization U G 5**

Analysis of Spanish culture through the study of selected topics in literature, film, and the arts; topic varies.

2 2-hr cl. Prereq: 561 and grad standing, or sr standing in Spanish with permission of instructor; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

This course offers undergraduates with special aptitudes a greater opportunity to do independent study than is possible in ordinary courses.

Su, Au, Wi, Sp Qtrs. Conference, library or phonetics laboratory arr. Prereq: 4th yr standing with a record of A in at least half of the Spanish courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**790 Foundations of Contemporary Critical Theory U G 5**

Interdisciplinary survey of the theoretical bases of the major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.

Wi Qtr. 2 2-hr or 5 cl. Prereq: Jr or sr or grad standing.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

**801 Teaching Spanish at the College Level G 5**

Methods and techniques for teaching Spanish language at the college level.

Au Qtr. Two-wk intensive workshop previous to beginning of qtr followed by a 2-hr seminar each week during qtr. Prereq: Teaching associate in the Dept of Spanish and Portuguese or permission of instructor. Not open to students with credit for Educ:T&L 801.03. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs. Cross-listed in Education: Teaching and Learning as 801.03.

**833 Studies in Spanish Synchronic Linguistics G 5**

Investigation of selected topics in synchronic Spanish linguistics (formal problems in Spanish phonology, morphology, syntax, semantics, and lexicology).

2 2-hr cl. Prereq: 732 or 734 (depending on topic), and permission of instructor. Repeatable to a maximum of 20 cr hrs. Individual topics not repeatable.

**836 Studies in Spanish Historical Linguistics G 5**

Study of selected problems of Old Spanish linguistic description and diachronic evolution of Spanish.

2 2-hr cl. Prereq: 736 or permission of instructor. Repeatable to a maximum of 20 cr hrs. Including cr hrs earned in 812; individual topics not repeatable.

**839 Seminar in Spanish Linguistics G 5**

Collaborative investigation of specific problems in Spanish linguistics (synchronic and historical, formal, and applied topics).

1 3-hr cl. Prereq: 833 or 836 or permission of instructor. Repeatable to a maximum of 20 cr hrs. Individual topics not repeatable.

**851 Seminar in Medieval Spanish Literature G 5**

Detailed exploration of advanced issues in Medieval Spanish literature.

2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**852 Seminar in Spanish Golden Age Literature G 5**

Detailed exploration of advanced issues in Spanish Golden Age literature.

2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**853 Seminar in Spanish Literature of the 18th and 19th Centuries G 5**

Detailed exploration of advanced issues in Spanish literature of the 18th and 19th centuries.

2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**854 Seminar in 20th Century Spanish Literature G 5**

Detailed exploration of advanced issues in 20th century Spanish literature.

2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**855 Seminar in Indigenous and Colonial Spanish American Literature G 5**

Detailed exploration of advanced issues in indigenous and colonial Spanish American literature.

2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**856 Seminar in Independence and 19th Century Spanish American Literature G 5**

Detailed exploration of advanced issues in Spanish American literature of the independence period and the 19th century.

2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**857 Seminar in Modern Spanish American Literature G 5**

Detailed exploration of advanced issues in Spanish American literature of the modern period from approximately 1880 to 1950.

2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**858 Seminar in Contemporary Spanish American Literature G 5**

Detailed exploration of advanced issues in contemporary Spanish American literature.

2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**859 Seminar in Comparative Iberian and Latin American Literature G 5**

Detailed exploration of advanced issues comparing Spanish, Spanish American and/or Luso-Brazilian literatures.

2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**865 Seminar in Latin American Cultures G 5**

Intensive exploration of a cultural period, topic, or problem; topic varies.

Sp Qtr. 1 3-hr cl. Prereq: 760 or equiv. Repeatable to a maximum of 20 cr hrs.

**866 Seminar in Spanish Culture G 5**

Intensive exploration of a cultural period, topic or problem; topic varies.

Au Qtr. 2 2-hr cl. Prereq: 761 or equiv. Repeatable to a maximum of 20 cr hrs.

**880 Foundations of Modern Literary Theory G 5**

Survey of the various historical sources of modern literary theory, from Aristotle to Stylistics and Post-structuralism; special attention to questions relevant to Hispanic literatures.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing.

**881 Literary Theory since Formalism G 5**

Panoramic view of twentieth-century literary theory since formalism, with emphasis on structuralism and post-structuralism; special attention to issues relevant to Hispanic literatures.

2 2-hr cl. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs.

**882 Seminar in Literary Theory G 5**

Intensive study of special topics in literary theory with attention to their relationship to Hispanic literature; possible topics: reception theory; deconstruction; sociology of literature.

2 2-hr cl. Prereq: One graduate level course in literary theory. Repeatable to a maximum of 20 cr hrs.

**886 Bibliography and Method G 3**

Introduction to problems, tools, and methods of linguistic and literary research.

**893 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-15**

Investigation of minor problems in the various fields of Spanish literature and language.

Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**999 Research in Spanish Language or Literature G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Speech and Hearing Science

110 Pressey Hall, 1070 Carmack Road, 292-8207

Information concerning frequency and quarter(s) of offering may be obtained by contacting the department.

General Prerequisites for Courses Numbered 600-700

A general foundation in undergrad courses in normal and disordered communication and related sciences is assumed in addition to listed specific prerequisites. Two exceptions are 714 and 716; other exceptions at the discretion of instructor.

### 230 Introduction to Communication and Its Disorders U 5

Survey of the topics, methodologies, and applications of speech and hearing science in normal and aberrant communication; lectures and readings.

### 250 Brain Mechanisms of Language U 5

Exploration of the neurological basis of language in humans and other species; examination of language deficits caused by brain damage.

### 294 Group Studies U 1-5

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Repeatable to a maximum of 10 cr hrs.

### 320 Principles of Phonetics U 5

Provides articulatory and acoustic descriptions of speech sounds and a comparative study of phonetic transcription systems.

4 cl, 1 rec.

### 340 Bio-acoustics for Speech and Hearing Science U 5

Basic principles of bio-acoustics; generation, transmission and reception of sound; neuroanatomy and neurophysiology as applied to speech production and perception.

Prereq: Math 148 or higher. Designed for students with little previous experience in biological or physical science.

### 360 Observation in Speech-Language Pathology and Audiology U 5

Observation in appraisal and treatment of communication disorders.

Prereq: 230. This course is graded S/U.

### 420 Introduction to Speech Science U 5

Anatomy and physiology of the structures involved in speech production and the acoustic characteristics of speech sounds.

Prereq: 320, or equiv, and 340, or equiv and one course from Biology 101, 102, 113, 114, H115, or H116.

### 430 Normal Development of Communication in Children U 5

Introduction to the development of communication in normal children.

### 440 Introduction to Hearing Science U 5

The anatomical properties and physiological processes of the system of hearing and balance in man and the stimulus processing capabilities of the normal auditory system.

Prereq: 340, or equiv; and one course from Biology 101, 102, 113, 114, H115, or H116; or Anatomy 199 or 200; or permission of instructor.

### 520 Introduction to Speech-Language Pathology U G 5

Etiology, appraisal, and management of disorders of speech and language in children and adults.

Prereq: 320 or equiv, 360 or equiv; 420 or equiv, and 430, or permission of instructor.

### 540 Introduction to Audiology U G 5

The nature, causes, identification, and rehabilitative treatment of persons with hearing disorders.

Prereq: 360 or equiv, and 440 or equiv.

### 605 Multicultural Aspects of Communication and its Disorders U G 5

Examination of normal communicative behavior, including development, and the assessment and management of speech-language-hearing disorders of culturally and linguistically diverse populations.

Prereq: Grad standing or one of the following: 230 or 430, or Linguist 201, 202, 261, or 265; or equiv.

### 610 Symbolic Representation in Human Communication U G 5

Complex logical problems in human communication.

Prereq: Sr standing and completion of college math requirement.

### 670 Speech, Hearing, and Language Problems in the School U G 3

First course in the certification curriculum for school speech pathology; emphasis on program administration, interdisciplinary evaluation, and intervention.

Prereq: Sr or grad standing in sph/hrng.

### 692 Workshops U G 1-8

Intensive study of a clinical area newly expanded within the field; geared for practicing clinicians to update information and increase skill levels.

Prereq: Written permission of workshop director. Repeatable to a maximum of 12 cr hrs.

### 693 Individual Studies U G 1-5

Conference, library, and laboratory work.

Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 698 Study Tour

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

#### 698.01^ Domestic U G 1-15

Repeatable.

#### 698.02^ Foreign U G 1-15

Repeatable.

### 705 Audiological Assessment I: Basic Test Battery U G 5

A study of the basic techniques in hearing assessment in clinical practice.

Prereq: 540.

### 706 Audiological Assessment II: Behavioral Evaluation of Cochlear, Retrocochlear Central Auditory Function U G 5

Detailed treatment of theoretical and practical considerations involved in the behavioral assessment of auditory lesions.

Prereq: 705 or equiv.

### 707 Audiological Assessment III U G 5

Introduction to auditory evoked responses; subject stimulus, tester and acquisition factors which affect bioelectric responses for normal and pathological conditions.

Prereq: 706.

### 710 Phonological Processes and Disorders U G 5

Approaches to understanding the nature and clinical management of phonological disability in children and youth.

Prereq: 430 and 520, or equivs, grad standing in speech and hearing science, or permission of instructor.

### 714 Introduction to Sign Language Systems U G 5

Introductory course in manual sign language systems.

### 716 Intermediate Sign Language Systems U G 5

Continuation course in manual sign language with an emphasis on increasing vocabulary and fluency.

Prereq: 714. Repeatable.

### 717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition and Food Management, Nursing, Psychology, and Social Work.

#### 717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children U G 3

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.

Not open to students with credit for 717.01 in any of the cross-listed areas.

#### 717.02 The Interdisciplinary Team: Clinical and Administrative Issues U G 3

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Not open to students with credit for 717.02 in any of the cross-listed areas.

#### 717.03 Developmental Disabilities U G 3

Focus on the most pertinent scientific and societal issues of developmental disabilities.

1 3-hr cl. Not open to students with credit for 717.03 in any of the cross-listed areas.

### 718 Advanced Sign Language Systems U G 5

Advanced course in manual sign language with an emphasis on achieving fluency in conversation.

2 2-hr cl, 1 1-hr lab. Prereq: 714 and 716. Repeatable to a maximum of 10 cr hrs.

**719 Early Intervention Interdisciplinary Team Dynamics G 3**

Interdisciplinary team-taught course with a focus on early intervention/early childhood education services for children birth to three and their families. Au Qtr. 2.5-hr cl. Prereq: Permission of instructor. Not open to students with credit for Alli Med 719, Edu PAES 719, HDFS 719, or Nursing 719. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, and Nursing.

**720 Community and Industrial Audiology U G 3**

The effect of noise on hearing, physiological and psychological function, productivity and communication; federal and state regulations reviewed and effects on communities discussed.

**725 Language Acquisition U G 5**

Development of language in children with an emphasis on the interaction between the development of language and cognition.

Prereq: Grad standing or permission of instructor.

**726 Child Language Disorders: Assessment U G 5**

Assessment of language disorders in preschool and elementary school-aged children; both norm-referenced and criterion-referenced.

Prereq: 725 and grad standing or permission of instructor.

**727 Child Language Disorders: Remediation U G 5**

Remediation of language disorders in preschool and elementary school-aged children; the relationship of language skills to reading disabilities is also covered.

Prereq: 726 and grad standing, or permission of instructor.

**734 Introduction to Aural Rehabilitation I U G 5**

Assessment and management of communication disorders associated with hearing loss.

Prereq: 540 or permission of instructor.

**735 Hearing Aids U G 5**

Electroacoustic characteristics and analysis of hearing aids; hearing aid selection, evaluation, procurement, fitting, and orientation.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of cognitive science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Prereq: Cptr/Inf 612, Linguist 612; Psych 612, or Philos 612; or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial and Systems Engineering, Linguistics, Philosophy, and Psychology.

**740 Fluency: Theory and Treatment U G 5**

Theories, principles, and procedures for the appraisal and treatment of persons with dysfluencies in speech.

Prereq: Grad standing in speech and hearing science or permission of instructor.

**741 Voice Disorders U G 5**

The role of the speech-language pathologist in the evaluation and interdisciplinary management of voice disorders and related pathologies.

Prereq: Grad standing in speech and hearing science or permission of instructor.

**742 Low Incidence Voice and Resonance Disorders U G 5**

Etiology, evaluation, and treatment of low incidence speech and voice disorders of the head and neck.

Prereq: 765 or equiv, and grad standing in speech and hearing science or permission of instructor.

**744 Clinical Seminar in Speech-Language-Hearing Disorders**

Readings and discussion of topics pertinent to the assessment and treatment of communication disorders. Each decimal subdivision repeatable to a maximum of 10 cr hrs; cr hrs in excess of 10 must be approved by the Graduate Studies Committee.

**744.01 Hearing Disorders G 1**

Prereq: 540 or equiv or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

- A— Introduction to Audiology Clinic
- B— Integrating Diagnostic Information and Report Writing
- C— Advanced Amplification Protocols
- D— Central Auditory Processing Protocols
- E— Clinical Grand Rounds
- F— Professional Issues
- G— Contemporary Issues

**744.02 Speech Language Disorders G 1**

Prereq: 3 cr hrs of sph/hrng course work at 600 level or above, or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

- A— Introduction to Speech-Language Pathology Clinic
- B— Treatment Methodologies for Articulation and Phonology
- C— Language Assessment and Intervention
- D— Neurogenics
- E— Special Issues
- F— Professional Issues
- G— Contemporary Issues

**750 Assessment of Vestibular Function G 5**

Study of the techniques involved in the administration and interpretation of electronystagmography, rotation, and posturography assessments.

**760 Aphasia and Related Adult Language Disorders U G 5**

Language disorders resulting from brain injury in adults.

Prereq: 765 or equiv, and grad standing; or permission of instructor.

**761 Neurologic Motor Speech Disorder U G 5**

The nature, treatment and assessment of neurologically based motor speech disorders in an interdisciplinary context.

Prereq: 765 or equiv, and grad standing; or permission of instructor.

**762 Traumatic Brain Injury in Children and Adults U G 5**

The mechanism of traumatic brain injury, its impact on communication, and the methods of assessment and intervention.

Prereq: 765 or equiv, and grad standing; or permission of instructor.

**763 Evaluation and Treatment of Dysphagia in Adults and Children U G 5**

The role of the speech-language pathologist in assessment and treatment of swallowing disorders in children and adults.

Prereq: 765 and grad standing or permission of instructor.

**765 Neurology of the Speech and Hearing Mechanism U G 5**

Structure and function of the central and peripheral nervous systems as they relate to speech and hearing.

Prereq: Grad standing in speech and hearing science or permission of instructor.

**766 Signals and Systems for Speech and Hearing G 5**

Principles underlying the use of electro-acoustic instrumentation in the speech and hearing sciences.

Prereq: College-level algebra.

**770 Clinical and Educational Methods in the Schools G 3**

Models, strategies, methodologies, and curriculum involved in planning, implementing, and evaluating team-based instruction for students with communication, language, and learning disabilities.

Prereq or concur: 670; or permission of instructor.

**775 Advanced Hearing Science G 5**

The structure and function of the ear and the stimulus processing capacities of the ear as they relate to performance on tests of auditory function in normal and impaired listeners.

Prereq: 765, 766.

**776 Advanced Speech Science U G 5**

Graduate introduction to speech instrumentation and speech acoustics; topics in spectrographic analysis and speech synthesis.

Prereq: 420 or equiv.

**H783 Honors Research U 3-15**

A program of independent study, for the student with special aptitudes; individual conferences and reports.

Prereq: 4th yr standing with a grade of A in at least half of the sph/hrng courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**785 Research Methods I G 5**

Introduction to research design and data analysis for the hearing and speech sciences.

Prereq: Grad standing.

**786 Research Methods II G 5**

Introduction to descriptive and inferential statistics as they are utilized in speech and hearing science.

Prereq: 785 or permission of instructor.

**794 Group Studies U G 3**

Prereq: Permission of instructor.

Repeatable to a maximum of 20 cr hrs.



**805 Pediatric Audiology G 5**

Etiology and assessment of hearing loss in children.  
Prereq: 705, 706 and 707 or permission of instructor.

**806 Adult Hearing Disorders G 5**

The nature, diagnosis, and treatment recommendations of adult hearing disorders.  
Prereq: 705, 706, and 707; or equivs.

**815 Clinical Assessment and Training Methods for the Singing Voice G 3**

An interdisciplinary course in vocal pedagogy and speech-language pathology which explores methods within each discipline for assessing and training the singing voice.

2 cl, 2 lab hrs. Prereq: Grad standing in sph/hrng (with credit for 741) or music; or permission of instructor. Not open to students with credit for Music 815. Cross-listed in Music.

**820 Acoustic Phonetics G 3**

An introduction to the acoustic characteristics of human speech sounds, the acoustic theory of speech production, and spectrographic analysis.  
Prereq: 320 and Linguist 601, or equivs. Not open to students with credit for this topic under 940 or 950.

**832 Experimental Phonetics G 5**

Experimental investigations of acoustic, physiological, and psychological aspects of speech.

**835 Digital and Digitally Programmable Hearing Aids G 5**

Description of true digital and analog/digital hybrid hearing aids and presentation of commercially available programmable instruments.  
Prereq: 735.

**844 Practicum in Communication Disorders G 1-5**

Practicum with children and adults having speech, language, or hearing problems.

Prereq: Permission of instructor. Repeatable. This course is graded S/U.

**845 Clinical Internship: Speech, Language, and Hearing G 12**

Full-time experience in approved clinical setting to partially fulfill requirements for Plan B nonthesis option.

Prereq: Completion of 45 grad cr hrs and 40 hrs of clinical practicum. Prior approval of grad committee required. This course is graded S/U.

**846 Field Experience in the Schools G 6,12**

Major practicum experience for students pursuing certification to practice speech/language pathology in schools.

Prereq: 670 or equiv, grad standing in sph/hrng, and permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**858 Psychoacoustics G 5**

Theoretical concepts and psychophysical data relative to hearing and related laboratory experiments.

**870 School Internship Seminar G 3**

Special topics, management concerns, and other planned experiences relative to the school internship in speech-language pathology.

Prereq: 670 and 770, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**893 Directed Doctoral Studies G 3-10**

Directed, individualized areas of study for doctoral students in either the laboratory or clinical research tracks; conference, library, clinic and/or laboratory involvement.

Prereq: Doctoral standing in sph/hrng or permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**900 Doctoral Proseminar in Speech and Hearing Science G 1**

Advanced studies in speech and hearing science to acquaint doctoral students with departmental research, to pose possible dissertation topics, and to improve research/design skills.

Prereq: Doctoral standing in sph/hrng or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**940 Advanced Studies in Speech and Hearing Science G 3**

Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

**950 Seminar in Speech and Hearing Science G 3**

Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

**998 Research in Speech and Hearing Science: Thesis G 1-18**

Research for thesis purposes only.  
Repeatable. This course is graded S/U.

**999 Research in Speech and Hearing Science: Dissertation G 1-18**

Research for dissertation purposes only.  
Repeatable. This course is graded S/U.

## Statistics

404 Cockins Hall, 1958 Neil Avenue, 292-2866

Introduction to Biostatistics

See Biostat H318.

**133 Statistics for the Business Sciences U 4**

Introduction to the basic concepts of probability and statistics; sample statistics, discrete and continuous probability distributions; confidence intervals, and estimation.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: Math 132.

**135 Elementary Statistics U 5**

Introduction to probability and statistics, experiments, and sampling, data analysis and interpretation.

Su, Au, Wi, Sp Qtrs. 3 1-hr cl, 2 labs. Prereq: Math 050 or Mathematics Placement Level S. Not open to students with credit for any of the following: 125, 145, 245, Econ 442, Ed-T&P 786, Mol Gen 650, Polit Sc 685, Psych 220 or 510, or Soc Work 570 or 571. GEC data analysis course.

**145 Introduction to the Practice of Statistics U 5**

Topics include probability, descriptive statistics, correlation, regression, design of experiments, sampling, estimation, and testing; emphasis on applications, statistical reasoning, and data analysis using statistical software.

Su, Au, Wi, Sp Qtrs. 3 1-hr cl, 2 labs. Prereq: Math 116 or 130 or 148 or equiv. GEC data analysis course.

**245 Introduction to Statistical Analysis U 5**

Calculus-based introduction to data analysis, experimental design, sampling, probability, and inference.

Au Qtr. 3 cl, 2 1-hr labs. Prereq: Math 152 or equiv. GEC data analysis course.

**427 Introduction to Probability and Statistics for Engineering and the Sciences I U 3**

Introduction to probability, discrete and continuous random variables, expected value, and sampling distributions.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Math 254 or permission of chairperson. Not open to students with credit for 425. This course is not intended to stand alone as an introduction to probability and statistics. It should be followed by 428. GEC data analysis course.

**428 Introduction to Probability and Statistics for Engineering and the Sciences II U 3**

Continuation of 427; point and interval estimation; hypotheses tests for proportions, means, variances, and goodness-of-fit; least squares regression.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 427. Not open to students with credit for 426.

**494 Group Studies U 3-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**520 Mathematical Statistics I U G 5**

Probability, random variables, discrete and continuous distributions; binomial, Poisson, normal, gamma (chi-square), t, F, distributions; change of variable and moment-generating function techniques; order statistics; limit theorems.

Au, Wi Qtrs. 5 cl. Prereq: Math 254 or written permission of chairperson. Not open to students with credit for 610 or 620. GEC data analysis course.

**521 Mathematical Statistics II U G 5**

Confidence intervals; minimum variance unbiased estimation, maximum likelihood estimation; Neyman-Pearson theorem, uniformly most powerful tests, likelihood ratio tests, chi-square and F tests, nonparametric tests.

Sp Qtr. 5 cl. Prereq: 520. Not open to students with credit for 621.

**528 Data Analysis I U G 3**

Non-calculus treatment of descriptive statistics, statistical inference, goodness of fit, use of t, X<sup>2</sup> in one sample situation.

Au, Wi Qtrs. 3 cl, lab hrs arr. Prereq: Permission of instructor or grad standing. Not open to students with more than 5 cr hrs in stat.

**529 Data Analysis II U G 3**

Two sample tests, non-parametric one and two sample procedures, regression analysis, and two way analysis of variance.

Wi, Sp Qtrs. 3 cl, lab hrs arr. Prereq: 528.

**530 Data Analysis III U G 4**

Multiple regression models; diagnostics, inferences, and variable selection; ANOVA with several factors, mixed models, nesting.

Sp Qtr. 3 cl. Prereq: 529 or permission of instructor.

**600 Statistical Consulting I U G 2**

Role of statistical consultant; enhancement of problem solving and communication skills; development of a personal philosophy of consulting. Wi Qtr. Prereq: 645 and permission of instructor. This course is graded S/U.

**601 Statistical Consulting II U G 2**

Experience is given the student in working with real data through association with projects in the Statistics Consulting Service.

Su, Wi, Sp Qtrs. 1 1.5-hr cl. Prereq: 600 and permission of instructor. This course is graded S/U.

**602 Early Start in Statistics G 5**

Selected mathematical topics, including geometric series, binomial expansion, integration by parts, Taylor series; transformation of variables, linear algebra, basic concepts of probability.

Su Qtr. 5 cl. Prereq: Grad standing in stat.

**603 Teaching of Statistics G 4**

Introduction to the teaching of statistics; teaching strategies; communicating with students; review of topics taught in Stat 133, 135, and 145, and the computing lab.

Su Qtr. 4 cl. Prereq: Grad standing in stat. This course is graded S/U.

**610 Probability for Statistical Inference G 5**

Introduction to probability, random variables, and distribution theory intended primarily for students in MAS degree program.

Au Qtr. 3 cl. Prereq: Math 548 or permission of instructor.

**620 Statistical Theory I G 4**

Introduction to probability, conditional probability, independence, random variables, distribution functions, transformations, moment generating function; common probability distributions; marginal and conditional distributions, sampling distributions; convergence concepts.

Au Qtr. 4 cl. Prereq: Math 548. Not open to students with credit for 610.

**621 Statistical Theory II G 4**

Sufficiency, maximum likelihood estimation, minimum variance unbiased estimation, Bayes estimation, decision theory.

Wi Qtr. 4 cl. Prereq: 620 or written permission of instructor.

**622 Statistical Theory III G 4**

Likelihood ratio tests, Neyman Pearson theorem and uniformly most powerful tests, confidence intervals, applications to linear models.

Sp Qtr. 4 cl. Prereq: 621.

**623 Theory of Statistical Analysis G 5**

Estimation, hypothesis tests, best tests, likelihood ratio tests, confidence sets, sufficiency, efficient estimators; intended primarily for students in the MAS degree program.

Wi Qtr. 3 cl. Prereq: 610 or 620 or permission of instructor. Not open to students with credit for 621 or 622.

**632 Applied Stochastic Processes I U G 3**

Conditioning, discrete time Markov chains, Poisson processes, branching process.

Wi Qtr. 3 cl. Prereq: 623 or permission of instructor.

**635 Statistical Analysis of Time Series U G 3**

Time series models; estimation of the spectral density function; transformations of time series; prediction theory applications.

Au Qtr. Prereq: 521 or 525 or 623 or permission of instructor.

**641 Design and Analysis of Experiments U G 5**

The linear model for experimental designs; analysis of variance; factorial experiments; and block designs.

Wi, Sp Qtrs. 3 cl. Prereq: 521, 645, and knowledge of elementary linear algebra; or permission of instructor.

**645 Applied Regression Analysis U G 5**

Simple and multiple linear regression, diagnostics, model selection, models with categorical variables.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 521 or equiv.

**651 Survey Sampling Methods G 3**

Sampling from finite populations, simple random, stratified, systematic, and cluster sampling designs, ratio and regression estimates; non-sampling errors.

Sp Qtr. 2 cl. Prereq: 521.

**656 Applied Multivariate Analysis U G 5**

Matrix computation of summary statistics, geometry of sample data; multivariate normal distribution; MANOVA; principal components; discriminant analysis; topics may include factor analysis, cluster analysis, canonical correlation.

Sp Qtr. 3 cl. Prereq: 645 or equiv and knowledge of linear algebra. Some experience with computers is expected.

**661 Applied Nonparametric Statistics U G 5**

Noncalculus treatment of nonparametric tests, confidence intervals, estimation; topics include one- and two-sample problems, one- and two-way analysis of variance, multiple comparisons, correlation.

Su, Sp Qtrs. 5 cl. Prereq: 521 or 529 or equiv.

**663^\* Statistical Methods in Reliability U G 5**

Statistical failure models, graphical and analytic parametric estimation for censored samples, non-parametric survival function estimation, reliability of composite and repairable systems, Bayesian estimation and prediction.

Sp Qtr. 3 1.5-hr cl. Prereq: 521 or 623 or equiv.

**664 Principles of Statistical Quality Control U G 5**

Pareto diagrams; process control: Shewhart, CUSUM, empirical Bayes, multivariate and other control charts; economic design, process capability, Taguchi's method for off-line control; acceptance sampling.

Au Qtr. 3 cl. Prereq: 521 or 623 or equiv.

**665 Discrete Data Analysis U G 4**

Two-by-two tables; cross-sectional, prospective, and retrospective studies; log linear model analysis of cross-classified data; logistic regression analysis; analysis of stratified tables.

Sp Qtr. 2 cl. Prereq: 529 or 645 or permission of instructor.

**673 Monte Carlo Techniques U G 3**

This course covers the Monte Carlo topics of Stat 671.

Au Qtr. 3 cl. Prereq: 520 or 529 or equiv and some knowledge of computer programming, or permission of instructor. Not open to students with credit for 671.

**674 Data Management and Presentation I G 1**

Reading data, rearranging data, missing data, data calculations, merging data sets, transporting data sets, date values, formats and recoding; emphasizes use of statistical software SAS.

Wi Qtr. Arr. Prereq: 673, Cptr/Inf 201, and grad standing in stat; or permission of instructor. This course is graded S/U.

**675 Data Management and Presentation II G 1**

Creating datasets from output, more on numeric and character data, writing macros, making tables and graphs; emphasizes use of statistical software SAS.

Sp Qtr. Arr. Prereq: 674 or permission of instructor. This course is graded S/U.

**693 Individual Studies U G 1-5**

Individual conferences, assigned readings, and reports on minor investigations.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**722^\* Theory of Probability I G 4**

Measure and integration; random variables; independence; convergence in probability, almost everywhere, and in the mean; conditional probability and expectation.

Au Qtr. 4 cl. Prereq: Math 653. Not open to students with credit for Math 722. Cross-listed in Mathematics.

**723^\* Theory of Probability II G 4**

Weak convergence; characteristic functions; central limit theorems; random walks; introduction to martingales.

Wi Qtr. 4 cl. Prereq: 722 or Math 722. Not open to students with credit for Math 723. Cross-listed in Mathematics.

**742 Analysis of Variance U G 3**

Theory of the general linear model; least square estimates and properties, especially in non-full rank models; analysis of variance technique; factorial designs.

Au Qtr. 3 cl. Prereq: 521 or 623, and Math 471 or 601.

**745^\* Multiple Comparisons Procedures G 3**

Types and levels of multiple comparison inference, abuses, sample size computation, graphical representation.

Sp Qtr. 3 cl. Prereq: 742 or permission of instructor.

**746 Design and Analysis of Experiments U G 3**

A continuation of 742; various experimental designs; analysis of covariance, mixed and random models.

Wi Qtr. 2 cl. Prereq: 742.

**755<sup>+</sup> Multivariate Analysis I G 3**

Geometrical representations of data; random vectors, normal distribution for random vector and random data matrices, Wishart distribution, inferences based on normal theory.

Wi Qtr. 2 cl. Prereq: 521 or 623, and Math 471 or 601.

**756<sup>+</sup> Multivariate Analysis II G 3**

Multivariate regression analysis; principal component analysis; factor analysis; canonical correlation analysis; discriminant analysis—all from a theoretical point of view.

Sp Qtr. 2 cl. Prereq: 755.

**761\* Nonparametric Statistics I G 3**

Order statistics, equal in distribution technique, counting and ranking methods, distribution-free statistics, Monte Carlo power simulation studies, asymptotic relative efficiency.

Au Qtr. 3 cl. Prereq: 622 or 623.

**763\* Nonparametric Statistics II G 3**

Distribution-free confidence intervals, Hodges-Lehmann estimators, robust estimation, linear rank statistics; distribution-free tests: alternative methods for constructing distribution-free statistics.

Wi Qtr. 3 cl. Prereq: 761.

**773 Statistical Computing G 3**

Random number and variate generation, variance reduction, integral equations, resampling methods, maximization, E-M algorithm and other topics.

Au Qtr. 3 cl. Prereq: 622.

**789 Survey Research Practicum G 5**

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

Sp Qtr. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research and permission of instructor. Not open to students with credit for 789 in AED Econ, Agr Educ, Bus-Mktg, Econ, Edu P&L, Geog, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, or Sociol. Cross-listed in AED Econ, Agr Educ, Bus-Mktg, Econ, Ed P&L, Geog, J Com, Polit Sc, Psych, Pub Hlth, PubPol&M, and Sociol.

**801 Seminar on Research Topics in Statistics G 2**

Lectures on current research by each graduate faculty member in statistics.

Au Qtr. 1 2-hr cl. Prereq: 2nd yr standing in stat PhD program or permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

**820 Statistical Inference I G 3**

Statistical decision theory, foundations of statistics, Bayesian analysis, sequential analysis, sequential probability ratio test.

Au Qtr. 3 cl. Prereq: 622.

**821 Statistical Inference II G 3**

Sufficiency and invariance, unbiased and equivariant estimators, Neyman-Pearson, UMP, UMPU and invariant tests.

Wi Qtr. 3 cl. Prereq: 722, or Math 722 and 820.

**822 Statistical Inference III G 3**

Asymptotic theory for estimators and tests, resampling methods and other topics in modern inference.

Sp Qtr. 3 cl. Prereq: 723 or Math 723, and 821.

**825<sup>+</sup> Advanced Bayesian Analysis G 3**

Bayesian computation, nonparametric Bayes methods, semiparametric Bayes methods, robust Bayesian analysis, complex Bayesian models.

Wi Qtr. 3 cl. Prereq: 821.

**832 Applied Probability Models G 3**

Birth and death processes, Queueing Theory, Branching processes and other applied probability models.

Wi Qtr. 3 cl. Prereq: Math 722.

**847\* Advanced Design of Experiments G 3**

Partially balanced designs; factorial experiments, confounding and fractional replications, response surface designs.

Sp Qtr. Prereq: 746.

**881 Advanced Topics in Mathematical Statistics I G 3**

Topics to be taken from the following: multivariate analysis, stochastic processes, analysis of variance, components of variance models, advanced test design.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Grad standing in stat. Repeatable to a maximum of 9 cr hrs.

**882 Advanced Topics in Mathematical Statistics II G 3**

Continuation of 881.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Grad standing in stat. Repeatable to a maximum of 9 cr hrs.

**888\* Large Sample Theory G 3**

Mann-Wald theory of stochastic order relationships; asymptotic distribution of maximum likelihood estimates and likelihood ratio statistic, large deviation theory, asymptotic theory of well-known statistics.

Sp Qtr. 3 cl. Prereq: 822.

**893 Advanced Individual Studies G 1-5**

Individual conferences, assigned readings, and reports on investigations.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**894 Advanced Group Studies G 1-5**

Designed to give groups of advanced students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**895 Statistics Seminar G 1**

Topics range over the current research interests of statisticians from around the world; some lectures are of an expository nature.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Surgery

329 Means Hall, 1654 Upham Drive, 293-8701

**790 Research Studies in Surgery**

3 cl. Prereq: Permission of instructor.

**790.08 Plastic Surgery P G 3-5,6,12,18**

Repeatable to a maximum of 24 cr hrs. 1, 2, 3, or 4 months; offered all months. Repeatable to a maximum of 24 cr hrs for professional credit. Repeatable to a maximum of 15 cr hrs for grad credit. This course is graded S/U.

**791 Clinical Studies in Surgery**

Prereq: Permission of instructor.

**791.07 General Surgery P 12,24**

Repeatable to a maximum of 24 cr hrs. Offered all months.

**999 Research in Surgery G 1-18**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Swahili

486 University Hall, 230 North Oval Mall, 292-3700

**101 Elementary Swahili I**

Development of basic listening, speaking, and reading skills using a competency-based curriculum.

Su, Au, Wi, Sp Qtrs. Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Prereq: Permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from 1 cr hr to the next with proficiency at the level of 80% required for advancement.

**102 Elementary Swahili II**

Continuation of 101; further work on basic listening, speaking, and reading skills using a competency-based curriculum.

Su, Au, Wi, Sp Qtrs. Not open to students with credit for 102, or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis cond courses.

**102.01 Classroom Track U 5**

Prereq: 101 or 101.01 or 5 cr hrs of 101.51.

Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Prereq: Grade of B+ or above in 101.01 or 5 cr hrs of 101.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete from 1-5 cr hrs during the qtr. Progress is sequential from 1 cr hr to the next with proficiency at the level of 80% required for advancement.

**103 Intermediate Swahili I U 5**

Further development of listening, reading, speaking, and writing skills; readings based on Swahili culture and literature.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 102 or 102.01 or 102.51. Not open to students with credit for AfAm&ASt 203; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

**104 Intermediate Swahili II U 5**

Balanced use of basic language skills; emphasis on speaking and aural comprehension; further exposure to Swahili culture through reading of current newspapers, short stories, plays, and novels.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 103 or equiv. Not open to students with credit for AfAm&ASt 204; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

**401^ Advanced Swahili Grammar U 5**

Review of fundamental principles of grammar and syntax; exercises in Swahili.

Wi Qtr. 5 cl. Prereq: 104 or permission of instructor.

**402^ Advanced Swahili, Grammar and Composition U 3**

Introduction to advanced Swahili composition and grammar.

Sp Qtr. 3 cl. Prereq: 401 or permission of instructor.

## Swedish

314 Cunz Hall, 1841 Millikin Road, 292-6985

**101 Elementary Swedish I****101.01 Classroom Track U 5**

Development of aural comprehension, speaking, reading, and writing skills.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang course. No audit.

**102 Elementary Swedish II****102.01 Classroom Track U 5**

Continuation of development of aural comprehension, speaking, reading, and writing skills.

Wi Qtr. 5 cl. Prereq: 101.01 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. No audit.

**103 Intermediate Swedish I****103.01 Classroom Track U 5**

Balanced use of basic language skills; review of aural comprehension basics, speaking, reading, and writing.

Sp Qtr. 5 cl. Prereq: 102.01 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. No audit.

**104 Intermediate Swedish II****104.01 Classroom Track U 5**

Conclusion of intermediate Swedish; extensive practice in spoken and written Swedish.

Au Qtr. 5 cl. Prereq: 103.01 or equiv; or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. No audit.

**201 Swedish Conversation and Composition U 5**

Practice in basic written and spoken Swedish, emphasis on study of word forms and sentence structure, themes and oral presentations on topics of everyday life.

Wi Qtr. 5 cl. Prereq: 104 or equiv or permission of instructor. No audit.

**293 Individual Studies U 2-5**

Independent study of advanced Swedish language texts not covered in other course offerings.

Au, Wi, Sp Qtrs. Prereq: 104 or equiv or permission of instructor. Repeatable to a maximum of 10 cr hrs. Taught in Swedish. This course is graded S/U.

**294 Group Studies U 2-5**

Special topics to be announced in the quarter previous to the one in which the course is offered.

Wi, Sp Qtrs. 2 5-hr cl. Prereq: 104 or equiv or permission of instructor. Repeatable to a maximum of 15 cr hrs. Taught in Swedish.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

## Textiles and Clothing

231 Campbell Hall, 1787 Neil Avenue, 292-8063

**270 Aesthetics of Appearance U 3**

The perception and presentation of the self through appearances. Considerations include aesthetic norms, color psychology, body concerns, personality expression, and context.

Au Qtr. 3 cl and arr labs. This course is available for EM credit. VPA Admis Cond course.

**275 The Business of Fashion: Apparel, Textiles, and Home Furnishings U 3**

Survey of supply, manufacture, distribution, and auxiliary industries impacting production, distribution, and sale of textiles, apparel and products for the home; fashion terminology, creators, careers.

Au, Sp Qtrs. 3 1-hr cl. Not open to students with credit for 570.

**289 Introductory Field Experience U 3,5**

Ten-weeks practical experience or equivalent in approved retail establishment or other enterprise related to student's major interest.

Su, Au, Wi, Sp Qtrs. Prereq: 2.00 CPHR, 270, 275 and 375 or Fm Res M 351.02 and written permission of instructor. Open to txtl&clo majors only. This course is graded S/U.

**294 Group Studies U 2-3,5**

Selected topics in textiles and clothing.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**370 Fashion Design and Illustration U 5**

Creative approach to the study of apparel design through fashion illustration using a variety of media, product development, and production specifications: students develop portfolio.

Wi, Sp Qtrs. 1 2-hr cl, 2 2-hr labs, 2 hrs arr. Prereq: 270, 375.

**371 Textiles I U 5**

Fiber properties, yarn and fabric construction, color, and finishes as they relate to performance, care, and consumer satisfaction.

Au, Wi Qtrs. 2 2-hr cl, 1 2-hr lab. Prereq: 2nd yr standing.

**372 Appearance, Dress, and Cultural Diversity U 5**

A cross cultural study of the diversity and meaning of appearance and dress as manifestations of individual and group behavior, social organization, and cultural norms.

Sp Qtr. 4 cl. Prereq: Sociol 101 or Rurl Soc 105. Not open to students with credit for 272. GEC social science course. SS Admis Cond course.

**375 Ready-to-Wear Analysis U 3**

Examination and evaluation of ready-to-wear apparel and its details for construction, style, quality, and fit.

Au, Wi Qtrs. 3 cl. Prereq: 270 and 371.

**485 Merchandise Buying U 3**

Buyer's role in merchandise management and decision-making, planning, and control processes; merchandise resources and negotiating; and pricing and preparing merchandise for sale.

Wi Qtr. 3 cl. Prereq: 275, 375 or Fm Res M 351.02 and Acct&MIS 201 or 211. Not open to students with credit for 570.

**489 Advanced Field Experience**

Ten weeks of store and classroom experience in an approved organization related to the student's major interest.

Students enrolled in 489 may not take 589. If they have taken 289, it shifts to elective credit. Must apply two quarters in advance.

**489.01 Sales U 3**

Sp Qtr. Prereq: 270, 275, 595 and 372 or Fm Res M 351, jr/sr standing, txtl&clo major, 2.5 CPHR, permission of Fieldwork Coordinator. This course is graded S/U.

**489.02 Operations U 12**

Su Qtr. Prereq: 489.01, jr/sr standing, txtl&clo major, 2.5 CPHR, permission of Fieldwork Coordinator. This course is graded S/U.

**489.03 Leadership I U 3**

Au Qtr. Prereq: 489.02, jr/sr standing, txtl&clo major, 2.5 CPHR, permission of Fieldwork Coordinator. This course is graded S/U.

**489.04 Leadership II U 2**

Wi Qtr. Prereq: 489.03, jr/sr standing, txtl&clo major, 2.5 CPHR, permission of Fieldwork Coordinator. This course is graded S/U.

**571 Textile Analysis and Evaluation**

Standards and specifications, planning and conducting textile tests, analysis and interpretation of test data, quality assurance in textiles, apparel, and home furnishings industries.

Au, Sp Qtrs. 2 2-hr cl, 1 2-hr lab. Prereq: 371, Chem 102, Stat 133, or 135, or 145.

**571.01 Apparel Textiles U 5**

Application of textile testing and analysis to apparel textiles.

Not open to students with credit for 571.

**571.02 Interior Textiles U 5**

Application of textile testing and analysis to interiors textiles.

Not open to students with credit for 571.

**576 Global Patterns and Issues in Textiles and Apparel Trade U 3**

International factors affecting the textiles and apparel industries and their impact on the economy and consumers.

Wi Qtr. 2.5-hr cl. Prereq: 275, 371 and Econ 400 or 201, or permission of instructor.

**589 Internship U 15**

One quarter supervised experience at a department approved intern site related to the student's selected option. Investigation and analysis of assigned problems.

Su, Au Qtrs. 2 1.5-hr cl. Prereq: 2.5 cum pt-hr ratio, 4th yr standing, 595, 15 hrs in major, 7 hrs in supporting area (as per program sheet), Fashion & Interiors Merchandising or Product Development option only. Open to textile majors only. No other courses may be taken nor any other jobs held for the duration of the internship. Au Qtr interns must work through Dec 24. Autumn Retail Merchandising intern grades will be deferred to Wi Qtr. This course is graded S/U.

**590 Practicum in Textiles and Clothing Research U 1-5**

Provides students with the opportunity to work individually with a faculty member on a research project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**593 Individual Studies U 1-5**

Problems in various phases of textiles and clothing related to individual's program.

Su, Au, Wi, Sp Qtrs. H593 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. Regular conferences. This course is graded S/U.

**595 Professional Development U 2**

The professional: career opportunities and goals, position securement, professional organizations, and continued personal development.

Wi, Sp Qtrs. 2 cl. Prereq: 270, 275, or 3rd yr standing, 2nd level writing course. Recommended: 595 not to be taken more than 3 qtrs prior to 589.

**670 Computer-Aided Design in Apparel Product Development U 5**

Exploration of textile and apparel product development capabilities of computer-aided design and product specification systems used in industry; development of an apparel line.

Au Qtr. 3 2-hr cl, 4 hr arr. Prereq: 270, 370, 375; Art Ed 252. Open to students in Product Dev & Eval option only.

**672 History of Costume and Textiles U G 5**

A chronological study of costume and textiles from ancient civilization to modern times, with consideration of cultural forces that affected the development.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 371 and 3rd yr standing.

**673 Product Data Management in Apparel Product Development U 5**

Exploration of software that facilitates apparel design from idea to manufacture through specifications, forms, and databases dealing with materials sourcing, grading, costing, construction, and labor.

Sp Qtr. 3 2-hr labs, 4 hrs arr. Prereq: 270, 370, 371, 375, 670, permission of instructor. Open only to students in Product Development option.

**675 Fashion Analysis U 3**

An examination of fashion theories and the evolution of fashion in the 20th century applied to the merchandising of fashion.

Sp Qtr. 3 cl. Prereq: 275 or 570, and 672.

**H576 Social Responsibility in the Textiles and Apparel Industries U 5**

An introduction to research literature related to social responsibility in the Textiles and Apparel Industries emphasizing issue identification and analysis, conducting research, and research writing.

Sp Qtr. Prereq: Enrollment in an honors program or permission of instructor. Honors students from disciplines such as Human Ecology, Business, Education, Philosophy, Sociology, Psychology and Public Policy are encouraged to enroll.

**678<sup>^</sup> Preservation and Restoration of Historic Textiles and Apparel U G 3**

Study of techniques and procedures to preserve and restore textiles and apparel of historic value.

Su Qtr. 1 2-hr cl, 2 2-hr labs and arr hrs. Prereq: 10 cr hrs in 600 level and above textiles and clothing courses or equiv.

**685 Strategic Merchandising Management U 3**

Analysis and synthesis of merchandising practices and problems through the use of computer simulations and case studies.

Sp Qtr. 2 1.5-hr cl. Prereq: 485, Bus-Mktg 753, and Stat 135 or 145.

**690 Workshop**

Intensive study of a topic of common concern to the participants for 1 to 3 weeks. May be an off-campus or an on-campus full-time group meeting.

Prereq: Written permission of instructor. Travel and subsistence costs for off-campus workshops will be borne by the student.

**690.01 Textiles U G 1-4**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**690.02 Clothing U G 1-4**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**690.03 Merchandising U G 1-4**

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Selected topics in textiles and clothing.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable. This course is graded S/U.

**698.02 Foreign U G 1-15**

Repeatable. This course is graded S/U.

**698.03 New York U 2**

Concentrated on-site study of the fashion industry and apparel market with tours of laboratories, designer's workrooms, buying offices, and other related apparel/textile organizations.

Sp Qtr. Prereq: 19 cr hrs of txtl&clo courses. Open only to txtl&clo majors. Repeatable to a maximum of 12 cr hrs. The workshop will occur during the week preceding the qtr the course is offered. Students are required to attend preparation meetings the qtr prior to the tour. Application deadline is first week of Wi Qtr. This course is graded S/U.

**751<sup>^</sup>\* Textile Fiber Chemistry U G 3**

Study of physical and chemical properties of polymers, polymerization processes, and the physical and chemical properties of polymeric textile fibers.

Wi Qtr. 2 1.5-hr cl. Prereq: 571, or permission of instructor.

**752\* Textile Fiber Physics U G 3**

Study of the physical properties of fibrous polymers, the morphological arrangement of these polymers, the relationship between microstructure and fiber properties.

Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 371, 571, Chem 102, or equiv. Either 751 or 752 is required in the Master's program.

**772\* Costume and Culture U G 3**

National and regional dress in relation to culture, available resources, and technology.

Au Qtr. 2 1.5-hr cl. Prereq: 10 hrs at the 600 level and above, or written permission of instructor.

**777 Research in Textiles, Apparel, and Merchandising**

1 3-hr cl. Not open to students with credit for 877.

**777.01 Literature Review U G 3**

An introduction to the literature in textiles, apparel, and merchandising with emphasis on the substantive content and scope of the research.

Au Qtr. Prereq: Grad standing or permission of instructor.

**777.02 Methods U G 3**

Introduction to methods currently in use in textiles, apparel, and merchandising research, with emphasis on the research process and proposal writing.

Wi Qtr. Prereq: 777.01, or equiv with written permission of instructor.

**793 Individual Studies U G 1-5**

Problems in various phases of textiles and clothing related to individual's program.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**851\*\* Textile Fiber Microscopy G 3**

Study of the principles and techniques of microscopy with particular attention given to the methods used in the examination of textile fibers.

Sp Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 751 or 752, Chem 102 or permission of instructor.

**852\*\* Textile Dyeing G 3**

Study of the chemistry of dyes, the theory of dyeing and the dyeing process, the application of dyes, and the evaluation of dyed textiles.

Sp Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 751, or permission of instructor.

**870\*\* Theories of Fashion G 3**

Theories underlying fashion change, and an analysis of fashion as a social and economic force.

Su Qtr. 2 1.5-hr cl or 1 2.5-hr cl. Prereq: Research methods or written permission of instructor; 12 cr hrs at the 600 level and above.

**874\*\* Aesthetics: Appearance Management and Self Presentation G 3**

The aesthetics of dress as a medium of visual communication with analysis of appearance management strategies employed in the social presentation of self.

Wi Qtr. 2 1.5-hr cl. Prereq: 1 course in social psychology and 1 course in art; 777.01 and 777.02.

**875\*\* Social Psychological Aspects of Clothing G 3**

A study of dress and adornment as they relate to human behavior.

Sp Qtr. 2 1.5-hr cl or 1 2.5-hr cl. Prereq: Research methods, 12 cr hrs at the 600 level and above, or written permission of instructor.

**876\*\* Textiles and Clothing Industries: Economic Appraisal G 3**

Impact of the textiles and clothing industries on the consumer and the economy.

Wi Qtr. 1 2.5-hr cl. Prereq: 571 or 670; Econ 400 or equiv; or written permission of instructor.

**877 Advanced Research Methods in Textiles and Clothing**

Research strategies and methodologies, with focus on paradigms and procedures and the assumptions underlying them, data analysis, and interpretation.

877.01 and 877.02 will be offered in alternate years.

**877.01\*\* Quantitative Research Methods in Textiles and Clothing G 3**

Study of research in Textiles and Clothing, focusing on experimental design, model building, and data analysis and interpretation, including regression, correlation, and analysis of variance.

Au Qtr. 2 1.5-hr cl. Prereq: 777.02, Stat 529, or permission of instructor.

**877.02\*\* Qualitative Research Methods in Textiles and Clothing G 3**

Exploration of qualitative research methodologies, with emphasis on epistemological assumptions and interpretation.

Su Qtr. 1 2.5-hr cl. Prereq: 777.02 or equiv.

**878\*\* History of Textiles G 3**

The development of textiles in prehistoric, ancient, medieval, and modern history, with special emphasis on Western European textiles.

Sp Qtr. 1 2-hr cl, hrs arr. Prereq: 672 or written permission of instructor.

**879 Current Topics in Textiles and Clothing**

Analysis of current developments, issues, and trends in textiles, clothing, and merchandising; topics to be announced.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: 12 cr hrs at the 600 level and above, including research methods; or written permission of instructor.

**879.01 Textiles G 1-3**

Repeatable to a maximum of 9 cr hrs.

**879.02 Clothing G 1-3**

Repeatable to a maximum of 9 cr hrs.

**879.03 Merchandising G 1-3**

Repeatable to a maximum of 9 cr hrs.

**880\*\* Semiotics of Apparel and Related Consumer Products G 3**

Study of sign systems and the production of meaning applied to apparel, appearance, and related products.

Wi Qtr. 1 2.5-hr cl. Prereq: Grad standing.

**889 Practicum in Research in Textiles and Clothing G 1-5**

Participation in the research process under the supervision of a faculty member.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing, a research methods course, e.g. 772.02 or equiv, and permission of instructor. Repeatable to a maximum of 15 cr hrs. A maximum of 5 cr hrs may be included in student's Program of Study. This course is graded S/U.

**894 Group Studies G 2-3,5**

Selected topics in textiles and clothing.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**993 Individual Studies G 1-5**

Problems in various phases of textiles and clothing related to individual's program.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research: Thesis G 1-18**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**999 Research: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Theatre

1089 Drake Union, 1849 Cannon Drive, 292-5821

**100 Introduction to Theatre U 5**

A study of the theatre with emphasis upon its cultural and social influences in our society.

Au, Wi, Sp Qtrs. H100 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. GEC arts and hums VPA course. VPA Admis Cond course.

**161 Dance and Theatre, 1945 to the Present U 5**

Survey of contemporary practices in western dance and theatre from 1945 to the present, with emphasis on major stylistic trends, multicultural influences, and principal artists and their works.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl, 1 1-hr rec. Not open to students with credit for Arts Col 161 or Dance 161. GEC arts and hums VPA course. VPA Admis Cond course. Cross-listed in Dance.

**205 Technical Production Practicum U 1**

Provides experience in technical production activities.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. VPA Admis Cond course.

**210 Fundamentals of Script Analysis U 3**

Fundamental principles for intensive study of the playscript as the basis of production.

Wi, Sp Qtrs. Prereq: 100. VPA Admis Cond course.

**220 Technical Production Fundamentals I U 3**

Basic aspects of scenery design construction; theory, process, equipment, materials, and skills.

Su, Au, Wi Qtrs. 2 cl, 2 lab hrs. VPA Admis Cond course.

**221 Technical Production Fundamentals II U 3**

Basic aspects of lighting design and technology, theory, process, equipment, materials, and skills.

Wi, Sp Qtrs. 2 cl, 2 lab hrs. VPA Admis Cond course.

**222 Technical Production Fundamentals III U 3**

Basic aspects of costume design and construction; equipment, theory, process, equipment, materials, and skills.

Au, Sp Qtrs. 2 cl, 2 lab hrs. VPA Admis Cond course.

**H230 Moving Image Art U 5**

Exploration of creative moving image art through the use of video and with participation in Wexner Center film/video program.

Wi Qtr. 1 2-hr cl, 1 3-hr cl. Prereq: Enrollment in an honors program or permission of instructor, and soph standing. GEC arts and hums VPA course.

**271 Great Ages of the Theatre U 5**

Concepts and characteristics of the great periods of the theatre of the western world.

Au, Wi, Sp Qtrs. Offered only on regional campuses. H271 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv. GEC arts and hums VPA course. VPA Admis Cond course.

**280 Acting Fundamentals I U 3**

Basic acting techniques; imagination, concentration, human psychology as applied to creation of character and development of stage presence.  
Au, Wi, Sp Qtrs. 4 lab hrs. VPA Admis Cond course. GEC arts and hums VPA course.

**305 Production Run Crew Practicum U 2**

Hands-on involvement in the production of live theatre; participation leading to a more thorough understanding of theatre and in particular theatre design and technology.

Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 8 cr hrs.

**310 Stage Directing U 3**

Techniques of play analysis, interpretation, composition, movement, rhythm and tempo; their integration in stage direction.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 210, 280, and jr standing.

**341\* Introduction to Stage Design U 3**

Introduction to basic design elements of stage design including research, sketching, color theory, and model building.

Wi Qtr. 2 1.5-hr cl. Prereq: 220.

**353 Stage Makeup U 3**

Practical application of the theories and techniques of theatrical makeup and presentational theatre styles.

2 3-hr labs. Not open to students with credit for 250 or 251.

**367 Theatre Writing Courses**

Study of theatre history at an intermediate level with emphasis on writing skills.

5 cl or 2 2.5-hr cl. Prereq: English 110 or 111 or equiv, and soph standing. GEC second writing and social diversity courses.

**367.01 Self Images: America on Stage, 1830 to the Present U 5**

Exploration of the images of Americans presented on popular stages through written analysis of theatrical and critical texts.

Au, Wi, Sp Qtrs. Not open to students with credit for 367.

**367.02 African American Theatre History U 5**

Examination of the aesthetic and sociological evolution in America of African American theatre and its literature.

Au, Sp Qtrs. Not open to students with credit for AfAm&AST 367.02. Cross-listed in African-American and African Studies.

**380 Acting Studio IA U 3**

Studio in acting focusing on the principles of Stanislavsky in rehearsed scenes.

Au Qtr. 3 2-hr cl. Prereq: 280, 383, and 386; or permission of instructor.

**381 Acting Studio IB U 3**

Studio in acting focusing on the special challenges of acting in Shakespeare's plays.

Wi Qtr. 3 2-hr cl. Prereq: 280, 383, and 386; or permission of instructor.

**382 Acting Studio IC U 3**

Studio in acting focusing on the use of improvisation as a technique for exploring rehearsed scenes.

Sp Qtr. 3 2-hr cl. Prereq: 280, 383, and 386; or permission of instructor.

**383 Speech and Voice Studio I U 3**

Basic study and training in voice production, phonetic transcription, and vocal expressiveness.

Au, Wi, Sp Qtrs. Prereq: 280.

**384 Speech and Voice Studio II U 3**

Continuation of 383; developing vocal range and resonance, breath control, articulation and expanded dialect choices through work on a variety of performed texts.

Wi Qtr. 4 cl. Prereq: 383.

**385 Speech and Voice Studio III U 2**

Individual voice problems: phonetic transcription and sound appreciation.

Sp Qtr. 4 cl. Prereq: 384.

**386 Stage Movement Studio I U 3**

Fundamentals of movement training; particular attention on physical awareness, body alignment, and physical principles of acting.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 280.

**387 Stage Movement Studio II U 2**

Introduction to mask work: continuation of 386.

Wi Qtr. 4 cl. Prereq: 386.

**388 Stage Movement Studio III U 2**

Introduction to stage combat: continuation of 387.

Sp Qtr. 4 cl. Prereq: 387.

**405 Theatre Practicum II**

Provides experience in theatrical performance and production activities at an intermediate level.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs in any combination of decimal subdivisions.

**405.01 Stage Direction/Management U 1-3**

Repeatable to a maximum of 18 cr hrs.

**405.02 Technical Production U 1-3**

Repeatable to a maximum of 18 cr hrs.

**405.04 Stage Design U 1-3**

Repeatable to a maximum of 18 cr hrs.

**405.05 Costuming/Makeup U 1-3**

Repeatable to a maximum of 18 cr hrs.

**405.08 Acting U 1-3**

Repeatable to a maximum of 18 cr hrs.

**405.09 Theatre Management U 1-3**

Repeatable to a maximum of 18 cr hrs.

**405.10 General U 1-3**

Repeatable to a maximum of 18 cr hrs.

**405.12 Lighting U 1-3****494 Group Studies U 1-3**

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**531 Theatre Repertory I U 3**

Survey of representative world drama and theatre from classical Greece to the 17th century.

Au Qtr. 2 1.5-hr cl.

**532 Theatre Repertory II U 3**

Survey of representative western drama and theatre from the 17th century through the rise of realism.

Wi Qtr. 2 1.5-hr cl.

**533 Theatre Repertory III U 3**

Survey of representative drama and theatre since the rise of realism.

Sp Qtr. 2 1.5-hr cl.

**600 Professional Aspects of Theatre U G 3**

Study of the professional theatre as a business; contracts, unions, the theatre marketplace; preparation of resumes, portfolios, audition pieces, interview.

Au Qtr. 3 cl. Prereq: 4th yr standing in theatre or final yr of grad study.

**601 Theatre Management U G 3**

Principles, practices, and techniques of theatre management and a survey of modern management techniques.

Prereq: 220 and 221; or permission of instructor.

**602 Stage Management U G 3**

Principles, practices, and techniques of stage management, and a survey of modern management techniques.

Au Qtr. 2 2-hr cl. Prereq: 220 and 221, or permission of instructor. Not open to students with credit for 601 prior to Au Qtr 1994.

**610 Advanced Stage Directing U G 3**

Principles, techniques, and practice of advanced direction and integration of technical elements in theatrical production.

Sp Qtr. 2 2-hr cl. Prereq: 310 or permission of instructor.

**621 Theatre Graphics U G 3**

Technical and design graphics, and drafting procedures for production of scenery and lighting designs.

Sp Qtr. 2 2-hr cl. Prereq: 220 or permission of instructor.

**622\* Metals as a Scenic Element U G 3**

Introduction to metal products and fabrication techniques for scenery and properties.

Wi Qtr. 2 2-hr cl. Prereq: 220 or permission of instructor.

**623\* Advanced Technical Production U G 3**

Consideration of methods and materials for stage rigging, mechanics, and non-traditional scenic materials.

Sp Qtr. 2 2-hr cl. Prereq: 220 or permission of instructor.

**624\* Technical Direction U G 3**

Study of technical direction and production management; budget, personnel, schedule, other logistic problems in technical production.

Sp Qtr. 2 2-hr cl. Prereq: 220 and 221, or permission of instructor.



**625 Lighting Design I U G 3**

A study of light as a design element for theatrical performance; analysis and preparation of designs for theatre applications.

Au Qtr. 2 2-hr cl.

**626\* Theatre Sound Techniques U G 3**

A survey of equipment and operational techniques used to provide sound support for theatrical productions.

Wi Qtr. 2 2-hr cl. Prereq: 221 or permission of instructor.

**631 Cinema Production I U G 5**

Principles and procedures in 16 mm camera production, including camera, scripting, lighting, editing, and sound; emphasis on film as a form of visual expression.

1 2-hr cl, 2 2-hr labs. Not open to students with credit for Photog 551. Students must have own exposure meter.

**632 Cinema Production II U G 5**

Intermediate 16 mm film production; introduces lip-sync sound recording, advanced cinematography and post-production procedures, including the mix and release printing to film or video.

2 2-hr cl. Prereq: 631. Not open to students with credit for Photog 553.

**633 Editorial Process U G 5**

Introduces theoretical and procedural basis for montage, controlling cinematic time, and understanding relationship of sound to image, including digital audio post-production.

2 2-hr cl. Prereq: 631. Not open to students with credit for Photog 555.

**634 Video Production I U G 5**

An introduction to creative single camera video production—emphasis on performance, staging, and editing short video productions.

Au, Wi Qtrs. 2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for Photog 661.

**635 Video Production II U G 5**

Continued exploration of creative single camera video production; topics may include documentary, drama, and experimental.

Sp Qtr. 2 2-hr cl. Prereq: 634 or permission of instructor. Not open to students with credit for Photog 662.01, 662.02, and 662.03. Repeatable to a maximum of 10 cr hrs.

**636 Screenwriting U G 5**

Exploration of creative script-writing for video/cinema; development of short or feature length scripts.

2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for Photog 560.

**640 Decorative Arts for Theatre U G 3**

Survey of ancient to modern decorative arts and their adaptation to stage use, with emphasis on interiors, furniture, textiles, and colors.

Wi Qtr.

**641 Stage Design Media U G 3**

Techniques of rendering for stage design in various media.

Au Qtr. Prereq: Permission of instructor.

**642 Scene Painting and Watercolor U G 3**

Techniques used in scene painting and watercolor; mixing and matching colors, rendering texture and form, enlarging painter's elevations; types of paints used in scene painting.

Sp Qtr. Prereq: 641 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**643 Stage Design I U G 3**

Investigation of 20th-century design and rendering techniques and their application to the stage; experience in researching and designing projects.

Au Qtr. 2 cl, 3 lab hrs, and indiv conferences. Prereq: 341 or permission of instructor.

**644 Intermediate Stage Design II U G 3**

Presentation of the design concept in three-dimensional media; emphasis on designing for nonproscenium production.

Wi Qtr. 1 2-hr cl, 3 lab hrs. Prereq: 643 or permission of instructor.

**645 Modern Stage Design Styles U G 3**

Study of the application of major stylistic trends in scenic design to modern theatrical productions through lecture-discussion and specific design projects.

Sp Qtr. Arr. Prereq: 644 or permission of instructor.

**646\* Stage Properties U G 3**

Techniques in construction and design of stage properties, including production operation.

Au Qtr. 2 2-hr cl. Prereq: 220 or permission of instructor.

**651 Intermediate Stage Costume Construction U G 3**

Methods of pattern development and construction techniques for creating historical stage costumes.

Sp Qtr. 2 cl hrs, 2 lab hrs. Prereq: 222 or permission of instructor.

**652 Advanced Costume Construction for the Theatre U G 3**

The study of the materials, techniques, and procedures used in the design and construction of period stage costume, properties, and accessories.

Sp Qtr. 2 cl, 2 hrs lab. Prereq: 651 or permission of instructor.

**656 Costume Design for the Stage U G 3**

The study of the theories, principles, and process by which costumes are designed for a theatrical production.

Wi Qtr. 2 cl, 5 lab hrs. Prereq: 100 and 222 or permission of instructor.

**657 History of Costuming for the Stage U G 3**

Study of historical periods of clothing most often used in play production with emphasis on the relationship of period clothing to social deportment and movement.

Au Qtr. 2 cl hrs, 2 lab hrs.

**658 Intermediate Costume Design U G 3**

Methods of stylization of costume design for drama, ballet, opera, musical comedy, and children's theatre.

Sp Qtr. 2 cl, 5 lab hrs. Prereq: 656 and 657, or permission of instructor.

**660 Playwriting U G 5**

Laboratory course in playwriting; student plays developed from original idea through scenario into final production script with limited production of selected works.

Prereq: Basic knowledge of dramatic literature and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**671 Theatre Topics I U G 5**

Topical studies in theatre and drama from classical Greece to the 17th century.

Au Qtr. 2 2-hr cl. Prereq: 531, 532, and 533; or grad standing. GEC third writing course.

**672 Theatre Topics II U G 5**

Topical studies in theatre and drama from the 17th century through the rise of realism.

Wi Qtr. 2 2-hr cl. Prereq: 531, 532, and 533; or grad standing. GEC third writing course.

**673 Theatre Topics III U G 5**

Topical studies in theatre and drama since the rise of realism.

Sp Qtr. 2 2-hr cl. Prereq: 531, 532 and 533; or grad standing. GEC third writing course.

**674 Contemporary Theatre History U G 5**

Contemporary continental, English, and American theatre, post World War II to the present.

2 2-hr cl. Prereq: 531, 532, and 533; or grad standing. GEC third writing course.

**680 Cinema/Video Scene Workshop I U G 3**

Exploration of directing talent and acting for single-camera style video/film production.

3 2-hr cl. Prereq: Permission of instructor. Open only to MFA acting and cinema majors. Not open to students with credit for 986.

**681 Cinema/Video Scene Workshop II U G 3**

Addresses problems of directing talent and acting for single-camera style video/film production.

3 2-hr cl. Prereq: 680 or permission of instructor. Open only to MFA acting and cinema/video majors. Not open to students with credit for 987.

**684 Performance Studies in Outreach Theatre U G 3**

Use of improvisational acting techniques to develop the performance of an outreach touring theatre production.

Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**685 Mime U G 2**

Study of techniques, styles, and presentation of the art of mime.

2 2-hr cl. Repeatable to a maximum of 4 cr hrs.

**686 Period Dance/Movement for Actors U G 2**

An introduction to and instruction in Western European dance movement since the 16th century.

Au Qtr. 3 2-hr cl. Prereq: Permission of instructor.

**687 Stage Combat U G 2**

An introduction to and instruction in techniques of stage combat.

Sp Qtr. 3 2-hr cl. Prereq: Permission of instructor.

**689 Field Work in Theatre, Cinema, or Video U G 3-15**

Planned production or management experience in an off-campus professional, educational, community theatre, film or video facility, or other agency under supervision.

Su, Au, Wi, Sp Qtrs. Prereq: Advanced undergrad or grad standing or permission of adviser. Repeatable to a maximum of 15 cr hrs.

**692 Workshops U G 1-15**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Prereq: Upper-division or grad standing and prior study and training in the theatre arts or written permission of workshop director. Repeatable to a maximum of 18 cr hrs.

**693 Individual Studies U G 1-5**

Conference, library, and laboratory work.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**698 Study Tour**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic U G 1-15**

Repeatable.

**698.02 Foreign U G 1-15**

Repeatable.

**725 Advanced Stage Lighting Design U G 3**

Study and analysis of lighting design styles in relation to different forms of theatre arts; emphasis on practical problems.

Wi Qtr. 2 2-hr cl, 3 lab hrs. Prereq: 625 or permission of instructor.

**727 Advanced Lighting Technology U G 3**

Study of current and future lighting technology in the area of control systems and stage lighting equipment as it applies to advanced lighting design.

Sp Qtr. 2 2-hr cl. Prereq: 625 or permission of instructor.

**762 Theatre/Cinema Styles U G 5**

Study and analysis of significant styles of production in the live theatre, cinema, and video.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor required of undergraduates.

**771 Advanced Stage Movement Studio I U G 2**

Fundamentals of movement; introduction to principles of movement for the actor.

Au Qtr. 4 cl. Prereq: Permission of instructor.

**772 Advanced Stage Movement Studio II U G 2**

Special problems in movement for the actor; beginning study of stylized techniques.

Wi Qtr. 4 cl. Prereq: Permission of instructor.

**773 Advanced Stage Movement Studio III U G 2**

Special problems in movement for the actor; intermediate study of stylized techniques.

Sp Qtr. 4 cl. Prereq: Permission of instructor.

**774 Cinematic Representation G 3**

Exploration of issues of representation and meaning of cinematic expression.

2 2-hr cl. Prereq: Grad standing in theatre or permission of instructor.

**775 Concepts and History of the Repertory/Ensemble G 3**

Theory and practice of the repertory/ensemble model in the theatre, cinema, and video of the twentieth century.

2 2-hr cl. Prereq: Grad standing in theatre or permission of instructor.

**776 Issues in Contemporary Cinema/Video Production U G 3**

Historical examinations of experimental and innovative cinema/video works with participation in Wexner Center film/video program.

2 2-hr cl. Prereq: Permission of instructor.

**777 Studies in the Documentary U G 3**

Conceptual, aesthetic, critical, social, ethical, practical issues in the practice of documentary and docudrama production of cinema and video works.

2 2-hr cl, 1 lab. Prereq: Permission of instructor.

**778 A History of the Moving Image U G 3**

Overview of creative and technological developments of the kinetic image from the magic lantern to television; historical relationships of stage and screen.

2 2-hr cl. Prereq: Grad standing in theatre or permission of instructor.

**779 World Film Cultures U G 3**

Survey of world film cultures with focus on a specific national and regional cinema.

2 2-hr cl. Prereq: 778 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

**780 Advanced Acting Studio I U G 3**

Introduction to acting techniques, focusing on believability, impulse, and partnering.

Au Qtr. 3 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for 790.

**781 Advanced Acting Studio II U G 3**

Development of techniques for acting in realistic plays.

Wi Qtr. 3 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for 791.

**782 Advanced Acting Studio III U G 3**

Development of expanded techniques for acting in stylized plays.

Sp Qtr. 3 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for 792.

**H783 Honors Research U 3-5**

An individual program of study, with conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of the theatre courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee or the Arts Honors Committee whichever is relevant to the student's program. Repeatable to a maximum of 15 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**786 Advanced Speech and Voice Studio I U G 2**

Vocal technique for the actor focusing on breathing techniques.

Au Qtr. 4 cl. Prereq: Permission of instructor.

**787 Advanced Speech and Voice Studio II U G 2**

Vocal technique for the actor focusing on aspects of vocal production.

Wi Qtr. 4 cl. Prereq: Permission of instructor.

**788 Advanced Speech and Voice Studio III U G 2**

Vocal technique for the actor focusing on articulation of speech.

Sp Qtr. 4 cl. Prereq: Permission of instructor.

**800 Advanced Studies in Theatre**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

**800.01 Stage Direction/Management G 3,5**

Repeatable to a maximum of 40 cr hrs.

**800.02 Technical Production/Lighting G 3,5**

Repeatable to a maximum of 40 cr hrs.

**800.03 Dramatic Literature G 3,5**

Repeatable to a maximum of 40 cr hrs.

**800.04 Stage Design G 3,5**

Repeatable to a maximum of 40 cr hrs.

**800.05 Costuming/Makeup G 3,5**

Repeatable to a maximum of 40 cr hrs.

**800.06 Criticism, Theory, Playwriting G 3,5**

Repeatable to a maximum of 40 cr hrs.

**800.07 History G 3,5**

Repeatable to a maximum of 40 cr hrs.

**800.08 Acting G 3,5**

Repeatable to a maximum of 40 cr hrs.

**800.09 Theatre Management G 3,5**

Repeatable to a maximum of 40 cr hrs.

**801 Research Methods G 5**

Introduction to graduate study: methods and tools of research in all areas of theatre and cinema/video.

Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**802 Seminars in Theatre**

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

**802.03 Dramatic Literature G 2-5**

Repeatable to a maximum of 40 cr hrs.

**802.08 Acting G 2-5**

Repeatable to a maximum of 40 cr hrs.

**805 Graduate Theatre Practicum**

Individual theatrical performance and production activities at an advanced level under faculty supervision.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

**805.01 Stage Management G 1-5**

Repeatable to a maximum of 40 cr hrs.

**805.02 Technical Production G 1-5**

Repeatable to a maximum of 40 cr hrs.

**805.03 Dramaturgy G 1-5**

Repeatable to a maximum of 40 cr hrs.

**805.04 Stage Design G 1-5**

Repeatable to a maximum of 40 cr hrs.

**805.05 Costuming/Makeup G 1-5**

Repeatable to a maximum of 40 cr hrs.

**805.07 Stage Direction G 1-5**

Repeatable to a maximum of 40 cr hrs.

**805.08 Acting G 1-5**

Repeatable to a maximum of 40 cr hrs.

**805.09 Theater Management G 1-5**

Repeatable to a maximum of 40 cr hrs.

**805.12 Lighting G 1-5**

Repeatable to a maximum of 40 cr hrs.

**810 Directing Period Drama G 3**

Advanced problems in directing, utilizing scenes from period plays.

Prereq: 610, 671, 672, 673, and 762; or permission of instructor.

**812 Directing Workshop G 1**

Advanced processes in directing with an emphasis on the presentation of actual scenes/one-acts.

12-hr cl. Prereq: 610 or permission of instructor. Repeatable to a maximum of 9 cr hrs. This is a Progress course.

**813 Cinema/Video Sketchbook I G 3**

Exploration of sketchbook approach to research and development of creative cinema/video projects.

2 2-hr cl. Prereq: Permission of instructor.

**814 Cinema/Video Sketchbook II G 3**

Continued examination of creative approach to cinema/video idea development with introduction of actors to the process.

2 2-hr cl. Prereq: 813 or permission of instructor.

**815 Cinema/Video Sketchbook III G 3**

Application of creative methods used in sketchbook sequence to self-directed research and development of short sketchbook projects.

2 2-hr cl. Prereq: 814 or permission of instructor.

**816 Cinema/Video Mise en Scene I G 3**

Directed research and practice in issues of mise en scene for creative cinema/video production.

22-hr cl. Prereq: Permission of instructor. Open only to MFA theatre, cinema/video students.

**817 Cinema/Video Mise en Scene II G 3**

Exploration of devices of mise en scene to facilitate collaboration and repertory methods of cinema/video production.

2 2-hr cl. Prereq: 816. Open only to MFA theatre, cinema/video students.

**820 Pre-Production I: Thesis Idea G 3**

Cinema/video thesis concept development for narrative/non-narrative and documentary production.

2 2-hr cl. Prereq: 816.

**821 Pre-Production II: Scenario Development G 3**

Examination of concepts in screenplay development.

2 3-hr cl. Prereq: 820.

**822 Pre-Production III: Advanced Screenwriting G 3**

Alternative solutions to thesis script development.

2 2-hr cl. Prereq: 821 or permission of instructor.

**823 Montage I: Editing Concepts and Practice G 3**

Project-oriented course in the conceptual foundations of the art of cinematic and video editing.

2 2-hr cl. Prereq: 817 or permission of instructor.

**824 Montage II: Sound Concepts and the Image G 3**

Examination of innovative concepts and practice in sound/image design.

2 2-hr cl. Prereq: 823 or permission of instructor.

**825 Advanced Stage Lighting Design II G 3**

Advanced study of lighting design and its creative application to modern theatre practice.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 725 or permission of instructor.

**826 Montage III: Editorial Styles in Cinema/Video G 3**

Project-oriented course in editing styles and editor/director relationships.

2 2-hr cl. Prereq: 824 or permission of instructor.

**833\* Modern Drama G 5**

Studies in drama from the late 19th century to the present.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**834\* Contemporary Drama G 5**

Consideration of the most significant dramatists since 1975.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**845 Advanced Scene Design G 3**

Study of historic and modern scene design and application to modern theatrical stage practices; experience in executing creative and interpretive project designs.

Su, Au, Wi, Sp Qtrs. Prereq: 645 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

**855 Advanced Stage Costume Design G 3**

Theory, methods, and materials of costume design with emphasis on design problems for the stage.

Su, Au, Wi, Sp Qtrs. Prereq: 658 or written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**864\* Theatre Criticism I G 5**

Critical theory of the theatre: classical to neoclassical.

Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 860.

**865\* Theatre Criticism II G 5**

Critical theory of the theatre: 17th, 18th, and 19th centuries.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 861.

**866\* Theatre Criticism III G 5**

Critical theory of the theatre: 20th century.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 863.

**871\* Greek, Roman, and Medieval Theatre G 5**

Advanced study and directed research in Greek, Roman, and Medieval theatre and drama.

Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 870.

**872 European Renaissance Theatre and Baroque Theatre G 5**

Advanced study and directed research in European Renaissance theatre and Baroque theatre and drama.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**873\* 18th- and 19th-Century Theatre G 5**

Advanced study and directed research in European and American theatre and drama through the beginning of the twentieth century.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**879 Introduction to the Principles and Process of Acting G 3**

Major theories of acting and methods of actor training in the 20th century for the non-acting major.

2 2-hr cl. Prereq: Grad standing in theatre.

**880 Advanced Acting Studio IV G 3**

Laboratory in visual and verbal effects.

Au Qtr. 3 2-hr cl. Prereq: Permission of instructor.

**881 Advanced Acting Studio V G 3**

Laboratory in rehearsal methods.

Wi Qtr. 3 2-hr cl. Prereq: Permission of instructor.

**882 Advanced Acting Studio VI G 3**

Applied styles: exploration of acting techniques and conventions of comedy, tragedy, farce, melodrama, and tragicomedy.

Sp Qtr. 3 2-hr cl. Prereq: 881 or permission of instructor.

**883 Advanced Speech and Voice Studio IV G 2**

Vocal technique for the actor focusing on Standard Stage Speech.

Au Qtr. 4 cl. Prereq: Permission of instructor.

**884 Advanced Speech and Voice Studio V G 2**

Vocal technique for the actor focusing on work with texts.

Wi Qtr. 4 cl. Prereq: Permission of instructor.

**885 Advanced Speech and Voice Studio VI G 2**

Vocal techniques for Restoration and Greek drama: development of the techniques for the vocal performance of characters from the plays of the Restoration and Classical Greek periods.

Sp Qtr. 4 cl. Prereq: 884 or permission of instructor.

**886 Advanced Stage Movement Studio IV G 2**

Special problems in movement for the actor; advanced study of stylized techniques.

Au Qtr. 4 cl. Prereq: Permission of instructor.

**887 Advanced Stage Movement Studio V G 2**

Development of special movement skills.

Wi Qtr. 4 cl. Prereq: Permission of instructor.

**888 Advanced Stage Movement Studio VI G 2**

Graphing movement principles: review of specific movement principles, graphing them for the acting process.

Sp Qtr. 4 cl. Prereq: 887 or permission of instructor.

**889 Directed Teaching Experience in Theatre G 1-5**

Designed to aid the prospective teacher of theatre in the development of essential teaching skills in a variety of settings.

Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor.

**893 Individual Studies G 3-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**896 Advanced Acting Studio VII G 3**

Rehearsal techniques: special emphasis on the style, research, and characterization proper to the plays in the concurrent repertory season.

Au Qtr. 3 2-hr cl. Prereq: 882.

**891 Advanced Acting Studio VIII G 3**

Rehearsal techniques: special emphasis on concurrent plays in repertory company season.

Wi Qtr. 3 2-hr cl. Prereq: 880.

**892 Advanced Acting Studio IX G 3**

Rehearsal techniques: special emphasis on concurrent plays in repertory company season.

Sp Qtr. 3 2-hr cl. Prereq: 881.

**893 Advanced Speech and Voice Studio VII G 2**

Applied phonetics: advanced study of phonetic transcription and structural awareness.

Au Qtr. 4 cl. Prereq: 885.

**894 Advanced Speech and Voice Studio VIII G 2**

Stage dialects: process and practical application of phonetic and structural variations in performing dialects.

Wi Qtr. 4 cl. Prereq: 883.

**895 Advanced Speech and Voice Studio IX G 2**

Character voices: process and practical application of phonetic and structural variations in performing character voices.

Sp Qtr. 4 cl. Prereq: 884.

**896 Projects in Acting G 5**

Special projects in rehearsal and performance tied to departmental productions.

Au, Wi, Sp Qtrs. 3 2-hr cl and 6 4-hr rehearsals. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**897 New Works Lab G 3**

Laboratory in performer-created works.

Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**995 Proseminar G 1**

Reading, directed study, and/or projects in theatre history, criticism, literature, acting, directing, and/or design.

Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**996 Research in Theatre: Thesis G 1-6**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**999 Research in Theatre: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Turkish

203 Botany and Zoology Building, 1735 Neil Avenue, 292-9255

**101 Elementary Turkish I U 5**

Introduction to Turkish; development of listening, reading, speaking, and writing skills.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**102 Elementary Turkish II U 5**

Further development of listening, reading, speaking, and writing skills.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**103 Intermediate Turkish I U 5**

Development of listening, reading, speaking, and writing skills; reading of simplified literary texts about Turkish culture.

Sp Qtr. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

**104 Intermediate Turkish II U 5**

Reading of Turkish short stories and poems with attention to literary and cultural appreciation; development of basic language skills.

Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

**241 Turkish Culture U 5**

An introduction to Turkish culture through reading of literature and criticism, and listening and viewing of films, slides, and performances arranged for the class. Wi Qtr. 5 cl.

Wi Qtr. 5 cl. GEC arts and hums cultures and ideas course.

**293 Individual Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Special topics announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**371 Turkish Sufism U 5**

An introduction to the literature, forms of thought, and institutions of Turkish Sufism.

Sp Qtr. 22-hr cl. Prereq: English 110 or 111 or equiv. No knowledge of Turkish required. GEC arts and hums lit course.

**372 Turkish Literature in Translation U 5**

A study of Turkish literature and the history of its discourses, genres, and styles.

Wi Qtr. 5 cl. GEC arts and hums lit course.

**401 Advanced Turkish I U 5**

Extensive reading from literary texts, with practice in conversation and composition.

Wi Qtr. 5 cl. Prereq: 104 or equiv. Not open to students with credit for 294 Wi Qtr 1983 or Wi Qtr 1984.

**402 Advanced Turkish II U 5**

The study of nineteenth- and twentieth-century literary texts, with advanced composition and translation.

Sp Qtr. 5 cl. Prereq: 401 or equiv. Not open to students with credit for 294 Sp Qtr 1983 or Sp Qtr 1984.

**610 Ottoman Orthography, Conventions, and Style U G 5**

Usage and syntax in the old Turkish script, 14th through 20th centuries.

Au Qtr. 2 2-hr cl. Prereq: One course in Turkish at the 600-level or above, or permission of instructor.

**627 Classical Turkish Poetry U G 5**

Reading and analysis of Turkish poetry of the 13th through 18th centuries; Turkish metrics and literary theory.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 402 or permission of instructor.

**641 Travels in Turkey U G 5**

Turkish culture seen through the eyes of travellers writing in English.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 241 or 372 or permission of instructor. No knowledge of Turkish required.

**651 Modern Turkish Poetry and Prose U G 5**

Selected topics in poetry and prose of the 20th century; conducted in Turkish.

Au, Sp Qtrs. 5 cl. Prereq: 402 or permission of instructor.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Special topics announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**721 Studies in Turkish and Ottoman Literature and Criticism U G 5**

Movements, authors, and critical schools of Turkish and Ottoman poetry and prose.

Wi Qtr. 2 2-hr cl. Prereq: 10 cr hrs of Turkish literature at the 600 level or equiv, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**811 Seminar in Turkish and Ottoman Studies G 5**

Intensive study of a specific topic of literary and intellectual culture; preparation of final paper required.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**998 Research in Turkish G 1-10**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**TwI**

486 University Hall, 230 North Oval Mall, 292-3700

**101^ Elementary TwI I U 5**

Development of oral proficiency in elementary conversational TwI using a competency-based approach.

Au Qtr. GEC for lang course.

**102^ Elementary TwI II U 5**

Continuation of 101; development of aural and oral skills in elementary conversational TwI using a competency-based approach.

Wi Qtr. 5 cl. Prereq: 101. GEC for lang course.

**103^ Intermediate TwI I U 5**

Continuation of 102; further development of listening and speaking skills; introduction of reading as a basis for more oral practice.

Sp Qtr. 5 cl. Prereq: 102. GEC for lang course.

**104^ Intermediate TwI II U 5**

Continuation of 103; reading and comprehension exercises; reading from authentic texts.

Sp Qtr. 5 cl. Prereq: 103. GEC for lang course.

**Ukrainian**

232 Cunz Hall, 1841 Millikin Road, 292-6733

See also Slavic Languages and Literatures.

**101 Elementary Ukrainian I**

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit FL Admis Cond courses. GEC for lang course.

**101.51 Individualized Track U 1-5**

Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**102 Elementary Ukrainian II**

Development of oral and written language skills.

Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. FL Admis Cond courses. GEC for lang course.

**102.51 Individualized Track U 1-5**

Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

**103 Intermediate Ukrainian I****103.51 Individualized Track U 1-5**

Development of all four skills: listening comprehension, speaking, reading, and writing.

Prereq: 102.01 or 5 cr hrs of 102.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor. GEC for lang course.

**104 Intermediate Ukrainian II****104.51 Individualized Track U 1-5**

Continuation of 103.51; development of the four skills.

Prereq: 5 cr hrs of 103.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor. GEC for lang course.

## Undergraduate Student Academic Services

110 Enarson Hall, 154 West 12th Avenue, 292-6344

### 100 University Survey U 1

Introduction to the University community; strategies for successful transition to and participation in that community; institutional context of academic programs; education and learning as life-long processes; University resources and procedures.

Su, Au, Wi, Sp Qtrs. 2 1-hr cl. Not open to students with credit for Agr 100, Arch 100, Arts Col 100, Arts&Sci 100, Bio Sci 100, Bus Adm 100, Engineer 100, Hum Col 100, MPS Col 100, Nursing 100, SBS Col 100, or Scholars 100. H100 (honors) decimal subdivisions may be available to students enrolled in an honors program or by permission of college. Students schedule a section of University Survey corresponding to their curricular academic program.

- 100.01 Business Survey U 1
- 100.03 Food, Agricultural, and Environmental Sciences Survey U 1
- 100.05 Allied Medical Professions Survey U 1
- 100.07 Architecture Survey U 1
- 100.09 Art Survey U 1
- 100.11 Arts and Sciences Survey U 1
- 100.13 Dentistry Survey U 1
- 100.15 Dental Hygiene Survey U 1
- 100.17 Education Survey U 1
- 100.19 Engineering Survey U 1
- 100.21 General Baccalaureate Survey U 1
- 100.23 Human Ecology Survey U 1
- 100.25 Medicine Survey U 1
- 100.27 Music Survey U 1
- 100.28 Natural Resources Survey U 1
- 100.29 Nursing Survey U 1
- 100.31 Optometry Survey U 1
- 100.33 Pharmacy Survey U 1
- 100.35 Social Work Survey U 1
- 100.37 Veterinary Medicine Survey U 1

### 120 Internet Tools and Research Techniques U 1

This 4-week online course teaches how to use web browsers, e-mail, online discussion tools, and research skills for the internet and library database.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept.

### 121 Advanced Online Research U 1

This 4-week online course examines issues and specialized tools related to finding information in a student's chosen field.

Su, Au, Wi, Sp Qtrs. Prereq: 120 (or 194D), or satisfactory score on placement test.

### 194 Group Studies U 1-5

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Some sections may be taught using distance-learning technology.

## Veterinary Biosciences

206 Goss Laboratory, 1925 Coffey Road, 292-5661

### 610\* Humane Preparation and Use of Animals for Physiologic Investigation U G 3

Selection of species, pre-anesthetics, anesthetics, minor surgical procedures, cardiac catheterization, radiography, postmortem examination, and drug therapy as applied to physiologic investigations.

Sp Qtr. Prereq: Advanced standing in zoology or Physiol 600 or equiv; permission of instructor. Not open to students with credit for Vet Phys 610. Not open to vet med students.

### 640\* Fundamentals of Oncology P G 4

Lecture/seminars covering aspects of oncology: chemical and biologic carcinogenesis, epidemiology, genetics, developmental biology, biochemistry, cell kinetics, clonality, metastases, hormonal and immunology factors, and therapy.

Wi Qtr. Prereq: Permission of instructor. Not open to students with credit for Vet Path 640. Offered in cooperation with Pathology.

### 693\* Individual Studies U P G 1-10

Laboratory, library, conference, and reports concerning animal disease problems.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 50 cr hrs. This course is graded S/U.

### 696 Advanced Studies in Veterinary Biosciences P G 1-6

Advanced studies in various topics in the fields of Veterinary Biosciences. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet Med or Grad standing. Repeatable to a maximum of 20 cr hrs. This course is graded A-E.

### 700 Applied Functional Neuroanatomy I P G 3

Study of structure and function of autonomic, peripheral, and central nervous systems of infraprimates, with references to primates, as related to clinical neurology, neuropharmacology, neurosurgery, or neurobiological research.

Wi Qtr. 3 cl. Prereq: VM Coll 603, CBN&Anat 704 or equiv, and permission of dept. Not open to students with credit for Vet A&CB 700.

### 701\* Applied Functional Neuroanatomy II P G 3

An application of the structure and function of the central nervous system of the infraprimates, with reference to primates.

Sp Qtr. 3 cl. Prereq: VM Coll 603, Anatomy 704 or equiv, and permission of dept. Not open to students with credit for Vet A&CB 701.

### 709 Anatomy of Avian and Sub-Primate Laboratory Animals P G 3

A comparative anatomical study of the various systems of the avian species and common sub-human primates used in laboratory investigation.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: VM Coll 520 and 521 or equiv course work in anatomy. Not open to students with credit for Vet A&CB 710.

### 710 Applied Veterinary Clinical Pathology P 1

Designed to familiarize the senior veterinary student with the preparation and cytologic interpretation of blood films, body cavity fluids, and tissue aspirations and imprints.

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing on elective qtr. Not open to students with credit for Vet Path 710.

### 711 Basic Macroscopic Pathology P G 2

Interpretation of macroscopic tissue changes in diseases of domestic and exotic animal species, with correlation to pathogenesis.

Sp Qtr. Prereq: Permission of instructor. Not open to students with credit for Vet Path 796.01.

### 715 Applied Veterinary Medical Virology P G 3

Major viral pathogens of domestic animals are discussed and illustrated; principles of virology applicable to the recognition, differentiation, and prevention of diseases of animals are presented.

Sp Qtr. Prereq: Permission of instructor. Not open to students with credit for Vet Path 796.05.

### 716 Diseases of Poultry and Game Birds P G 3

A study of the etiology, recognition, prevention, and control of the important diseases of poultry and related game birds.

Au, Wi Qtrs. Not open to students with credit for Vet Path 796.06.

### 717 Current Topics of Veterinary Immunology P G 3

Discussion of modern topics in immunobiology as it relates to domestic animals.

Not open to students with credit for Vet Path 796.07.

### 718 Advanced Gross Pathology P G 1-5

Advanced training in gross dissection and interpretation of gross lesions in animals.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing in vet med. Not open to students with credit for Vet Path 796.08. Repeatable to a maximum of 5 cr hrs.

### 719 Basic Histopathology P G 3

Interpretation of basic histologic tissue changes in diseases of domestic and exotic animal species, with correlation to pathogenesis.

Wi Qtr. Prereq: 2nd yr standing. Not open to students with credit for Vet Path 796.09. Each student will be provided with a microscopical slide study set and a microscope.

### 720 Introduction to Applied Pathology P G 2

Correlation of macroscopic and histologic findings in diseases of domestic and exotic animal species, and the use of these findings in deducing pathogenesis.

Sp Qtr. 1-hr cl, 2-hr lab (Sat). Prereq: Vet med 1st yr standing.

### 730\* Endocrinology P G 5

A study of functions of the thyroid, parathyroid, pituitary, adrenal, pancreas, gonads, and other organs with possible endocrine functions.

Au Qtr. 4 cl, 1 lab. Prereq: Physiol 312 or equiv, organic chem, and permission of instructor. Not open to students with credit for Vet Phys 730.

### 739 Laboratory Medicine P G 1-10

Advanced training in veterinary hematology, cytology, and clinical chemistry; independent study, use of laboratory methods for the characterization of clinicopathologic change in hospitalized patients. Kociba and graduate faculty.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: DVM degree and grad standing. Not open to students with credit for Vet Path 740. Repeatable.

**740 Principles of Toxicology I G 3**

Introduction to the principles of toxicology and the factors that influence the expression of drug and chemical induced toxicological effects on major organ systems.

Wi Qtr. 3 cl. Prereq: Biochem 613 or equiv; Physiol 312 or equiv. Not open to students with credit for Anim Sci 740 or Pharmacy 740. Cross-listed in Animal Sciences and Pharmacy.

**741 Principles of Toxicology II G 5**

Toxicological effects of major classes of chemicals and current issues in toxicology, including air pollution, water quality, and hazardous waste.

Sp Qtr. 5 cl. Prereq: 740 or Anim Sci 740 or Pharmacy 740; Biochem 511 or equiv, Physiol 602 or equiv. Not open to students with credit for Anim Sci 741 or Pharmacy 741. Cross-listed in Animal Sciences and Pharmacy.

**750 Gas Exchange in the Mammalian Lung P G 2**

Introduction to pulmonary ventilation, diffusion of gases and pulmonary blood flow, and how lung structure is optimized for efficient gas exchange.

Su Qtr. 2 1-hr cl. Prereq: DVM or enrollment in vet med, or permission of instructor. Not open to students with credit for Vet Phys 750.

**751 Professional and Ethical Issues in Biomedical Sciences G 3**

A discussion course based on case scenarios dealing with ethical issues facing biomedical researchers, such as publishing practices, confidentiality, mentoring, etc.

Wi Qtr. 2 1.5-hr cl. Prereq: Currently enrolled in a graduate program in the biomedical sciences. Not open to students with credit for Vet Phys 751. Cross-listed in Pharmacology. This course is graded S/U.

**760 Specialized Study in Veterinary Medicine P 1-16**

Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing and permission of instructor. Repeatable to a maximum of 16 cr hrs. To be taken during elective qtr. Cross-listed in all veterinary medicine depts. Students must serve at least 4 wks in one experience to receive minimum elective cr. This course is graded S/U.

**761 Equine Surgical Anatomy P G 3**

Emphasis on blood and nerve supply to common surgical sites; special emphasis involving methods of anesthetizing selected surgical areas and areas useful in diagnostic procedures for lameness.

Wi Qtr. 1 cl, 1 3-hr lab. Prereq: VM Coll 521 or equiv. and permission of instructor. Not open to students with credit for Vet A&CB 796.01.

**762 Ophthalmic Anatomy P G 2**

The comparative anatomy, histology, neuroanatomy, and embryology of the orbit and its contents in mammals, birds, and reptiles.

Sp Qtr. Prereq: VM Coll 612 or equiv and permission of instructor. Not open to students with credit for Vet A&CB 796.02.

**763 Surgical Anatomy of the Dog and Cat P G 4**

Surgical and clinical anatomy of the dog and cat as studied by dissection, lecture, prosection, and palpation.

Sp Qtr. 2 cl, 2 2-hr labs. Not open to students with credit for Vet A&CB 796.03.

**778 Applied Veterinary Pharmacology P G 3**

General principles of pharmacology, emphasizing those drugs used in the practice of veterinary medicine; application of various techniques and methods of evaluating drug response in animals.

Wi Qtr. 2 cl, 2 hr lab. Prereq: Vet med 2nd yr standing or permission of instructor. Not open to students with credit for Vet Phys 778.

**780\* Clinical Pharmacology of Antimicrobial Drugs P G 3**

A detailed study of the basic principles and clinical pharmacology of antimicrobial and antiparasitic drugs in veterinary medicine; special consideration given to toxicities, drug-drug interactions and idiosyncrasies.

Sp Qtr. 3 cl. Prereq: Vet med 2nd or 4th yr standing or grad standing. Not open to students with credit for Vet Phys 780.

**781\* Principles of Veterinary Clinical Pharmacology P G 3**

Principles of clinical pharmacology and application of kinetic parameters to drug therapy in domestic animals; basis for choice of drug and dosage regimen.

Au Qtr. 3 cl. Prereq: Vet med 2nd or 4th yr standing or grad standing. Not open to students with credit for Vet Phys 781.

**790 Comparative Cardiovascular Physiology P G 3**

Comparative electrocardiography emphasizing fundamentals and clinical interpretations.

Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd, or 4th yr standing; or permission of instructor. Not open to students with credit for Vet Phys 790.

**791 Heart Sounds, Murmurs, and Pulse Curves P G 3**

Comparative hemodynamics and cardiovascular sound emphasizing apex and echocardiograms and pressure pulses, origins of heart sounds and murmurs, clinical interpretation and clinical pathological correlation.

Wi Qtr. 3 cl. Prereq: Vet med 2nd, 3rd, or 4th yr standing or permission of instructor. Not open to students with credit for Vet Phys 791.

**792\* Signs, Symptoms, and Treatment of Cardiopulmonary Disease P G 3**

Advanced comparative cardiovascular physiology with emphasis upon circulatory response to stress of various congenital and acquired cardiovascular defects.

Sp Qtr. 3 cl. Prereq: Vet med 2nd or 4th yr standing; or permission of instructor. Not open to students with credit for Vet Phys 792.

**794 Group Studies P G 1-6**

Group studies course in areas of comparative physiology and pharmacology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable.

**796\* Techniques in Comparative Reproductive Physiology and Pharmacology P G 3**

Laboratory methods in the study of various phenomena associated with reproduction and pharmacology of sex steroids and gonadotropins.

Sp Qtr. 3 2-hr labs. Prereq: Vet med and Med 4th yr standing, grad, or permission of instructor. Not open to students with credit for Vet Phys 796.

**797\* Advanced Comparative Electrocardiography P G 3-5**

Cellular and cardiac electrophysiologic and clinical features of complex cardiac arrhythmias and conduction disturbances.

Wi Qtr. 3 cl. Prereq: 790 or permission of instructor. Not open to students with credit for Vet Phys 795.

**800 Seminars in Veterinary Pathology**

Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor.

**800.01 Seminar in Veterinary Clinical Pathology G 1,2**

Case presentation with emphasis on clinicopathologic correlations; specimen evaluation, literature searches, preparation of clinicopathologic case reports, and preparation of visual aids.

Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**800.02 Veterinary Histopathology Seminar G 1**

Weekly histopathology slide seminars.

Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**801 Anatomical Techniques G 2-5**

Theory and practice of macroscopic, microscopic, and scanning electron microscopic methods, including specimen preparation for microcirculation studies, fixing, imbedding, sectioning, mounting, and staining of animal tissue. Special emphasis is placed upon techniques for the preparation of microcorrosion casts for SEM study.

Su, Au, Wi, Sp Qtrs. 1 cl, 6-15 lab hrs. Prereq: VM Coll 521, 531 or equiv and permission of instructor. Not open to students with credit for Vet A&CB 801. Repeatable to a maximum of 15 cr hrs.

**802 Advanced Veterinary Anatomy**

Advanced topographical anatomy of domestic animals studied by lecture, prosection, and dissection.

1 cl, 1 hr prosection, 2-6 lab hrs. Prereq: Vet med 3rd yr standing, veterinary gross anatomy, and permission of instructor.

**802.01 Limbs and Back of Domestic Animals G 3-5**

Not open to students with credit for Vet A&CB 802.01.

**802.02 Head and Neck of Domestic Animals G 3-5**

Not open to students with credit for Vet A&CB 802.02.

**802.03 Thorax, Abdomen, and Pelvis of Domestic Animals G 3-5**

Not open to students with credit for Vet A&CB 802.03.

**803 Muscle Biology and Ultrastructure G 3-5**

Structural basis of muscle contraction explored through application of methodology for myofibrillar protein isolation and characterization through electron microscopy.

Wi Qtr. 1 2-hr cl, 1 3-hr lab. Prereq: Permission of instructor. Not open to students with credit for Vet A&CB 803. Repeatable to a maximum of 15 cr hrs.

**810\* Advanced Systemic Pathology I G 3,5**

An advanced study of animal diseases as they affect all organ systems of the body.

Au Qtr. Prereq: Permission of instructor. Not open to students with credit for Vet Path 810.

**811 Advanced Systemic Pathology II G 3,5**

Advanced study of animal diseases as they affect all organ systems of the body.

Wi Qtr. 3 2-hr cl. Prereq: 810. Not open to students with credit for Vet Path 811.



**812 Advanced Systemic Pathology III G 3,5**

Advanced study of animal diseases as they affect all organ systems of the body.

Sp Qtr. 3 2-hr cl. Prereq: 810 and 811. Not open to students with credit for Vet Path 812.

**815 Veterinary Surgical Pathology G 3-5**

Biopsy methods and diagnosis; surgical specimens are studied, and emphasis is placed upon the correlation of lesions and functional pathology.

Su, Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: Enrollment in grad program in vet path; DVM and experience in basic histopathology. Not open to students with credit for Vet Path 815. Repeatable to a maximum of 40 cr hrs.

**841 Viral Pathogenesis and Oncogenesis G 5**

Cellular, immunological and molecular mechanisms involved with virus pathogenesis in animals/humans.

Au Qtr. 5 cl. Prereq: Med Micr 701 or equiv and Med Micr 754. Not open to students with credit for Vet Path 841 or Med Micr 841. Cross-listed in Medical Microbiology and Immunology.

**850 Research Seminar in Veterinary Biosciences G 1**

Presentation of new scientific knowledge in lectures and conferences by faculty and graduate students.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad or professional standing in vet bios. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

**999 Research in Veterinary Biosciences G 1-18**

Research for dissertation or thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

## Veterinary Clinical Sciences

1010 Veterinary Hospital, 1935 Coffey Road, 292-7105

**622 Advanced Equine Medical and Surgical Procedures**

Au, Wi Qtrs. 3-6 lab hrs. Prereq: Vet med 3rd yr standing and VM Coll 617. For students with an interest in equine medicine and surgery.

**622.01 Advanced Equine Medical and Surgical Procedures P G 1**

Tracheal wash, thoracentesis, CFS samples, bone marrow biopsies, epidural anesthesia, endoscopy, nerve blocks, castrations, arthrocentesis, tracheotomy, and cast applications.

Open to grad students with permission.

**622.02 Alternative Advanced Equine Medical and Surgical Procedures. P G 1**

Alternative to 622.01 for those students who object to the use of live animals in their education; this course will entail video instruction, assigned reading, and additional rotations in equine medicine and surgery, and field services which must be taken in the 4th yr to cover the subjects in 622.01.

**628 Small Animal Surgery P 4**

Topics in surgery of dogs and cats will be discussed, including both general and orthopedic surgery.

Au Qtr. 4 cl. Prereq: Vet Med 3rd yr standing.

**655 Photography in the Practice of Veterinary Medicine P 3**

Common medical photography principles applied in such areas as patient documentation, surgery, gross specimen photography, ophthalmology, and radiography reduction.

Au, Sp Qtrs. 3 cl.

**696 Advanced Studies in Veterinary Clinical Sciences P G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 2nd, 3rd or 4th yr standing. Repeatable to a maximum of 20 cr hrs.

**710 Applied Veterinary Medicine Options**

A series of clinical studies offered as electives for 4th year Vet Med students to arrange into an elective program in conjunction with a faculty adviser.

Su, Au, Wi, Sp Qtrs. Clinics, seminars, ward rounds, and 24-hr patient care responsibilities. Prereq: Vet med 4th yr standing.

**710.01 Receiving/Out-Patient Clinic P 1-5**

Clinical instruction designed to improve the student's proficiency in client relations, diagnosis, treatment, and prevention of diseases in out-patients.

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**710.02 Small Animal Medicine P 1-5**

Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of small animals.

Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**710.03 Small Animal Surgery P 1-5**

The application of principles of surgery to treatment of diseases of companion animals.

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**710.04 Food Animal Medicine and Surgery P 1-5**

Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of food animals.

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**710.05 Equine Medicine and Surgery P 1-5**

Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of the horse.

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**710.06 Field Service P 1-5**

The application of the principles of management, diagnosis, treatment, and prevention of disease in farm and exotic animals in the environment in which they are produced.

Field trips to facilities for patient care, case discussions, seminars, and 24-hr patient care responsibilities. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**710.07 Veterinary Clinical Radiology P 1-5**

Diagnostic and therapeutic techniques that will broaden the student's knowledge in clinical diagnosis and treatment.

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**710.08 Clinical Microbiology P 1-5**

Assignment of patients for in-depth study of diagnosis and course of disease with emphasis on selection and interpretation of laboratory parameters; emphasis on microbiologic and immunologic methods for diagnosis and evaluation of infectious disease.

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**710.09 Clinical Anesthesiology P 1-5**

The application of principles of anesthesiology.

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**710.12 Veterinary Clinical Ophthalmology P 1-5**

Application of principles of diagnosis and treatment of diseases of the eye to patients of all species.

Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**710.13 Applied Theriogenology P 1-5**

Application of principles of diagnosis, treatment, and prevention of diseases of the reproductive system of all species.

Sp Qtr. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**718 Clinical Problem Solving and Treatment in Small Animal Internal Medicine I P 3**

Problem-oriented course using case discussions to teach the diagnostic and therapeutic approach to the most common clinical problems in small animal internal medicine.

Au Qtr. 3 cl. Prereq: Vet Med 3rd yr standing.

**719 Clinical Problem Solving and Treatment in Small Animal Internal Medicine II P 3**

Problem-oriented course using case discussions to teach the diagnostic and therapeutic approach to the most common clinical problems in small animal internal medicine.

Wi Qtr. 3 cl. Prereq: Vet Med 3rd yr standing.

**720 Veterinary Clinical Nutrition****720.01 Introduction to Veterinary Clinical Nutrition P 2**

Basic animal nutrition and feeding and nutrition-related problems.

Wi Qtr. 2 cl. Prereq: Vet med 2nd yr standing or permission of instructor. This course is graded S/U.

**720.02 Advanced Veterinary Clinical Nutrition P 1-2**

Presentation of nutrition-related problems in large and small animal clinical practice.

Sp Qtr. 2 cl. This course is graded S/U.

**721 Veterinary Acupuncture P 1**

Practical approaches to diagnosis and treatment of clinical cases (dog, cat, horse, cow) by acupuncture of animals in the veterinary hospital.

Sp Qtr. 1 cl. Prereq: Permission of instructor. This course is graded S/U.

**724 Topics in Feline Medicine and Surgery P 1**

To provide third and fourth year veterinary students with information on selected medical and surgical topics unique to the cat.

Sp Qtr. 1-hr cl. Prereq: Vet med 3rd or 4th yr standing. Professional students only. Not repeatable. This course is graded S/U.

**725 Canine and Feline Dentistry P G 1**

Lectures, demonstrations, and laboratories covering prophylactic care, and extraction of teeth, endodontic and prosthodontic therapy.

Sp Qtr. Prereq: Vet Med 4th yr standing or permission of instructor.

**727 Companion Bird Medicine and Surgery P G 3**

All aspects of companion bird medicine, including husbandry, nutrition, pediatrics, diagnostic and therapeutic techniques, disease problems, radiology, anesthesia and surgery. Emphasis placed on psittacine species.

Wi Qtr. 3 cl. Prereq: Vet Med 2nd, 3rd, or 4th yr standing or written permission of instructor.

**730\* Topics in Equine Sports Medicine P G 3**

Current concepts of diagnosis and treatment of diseases that limit athletic performance of the horse.

Wi Qtr. 4 cl. Prereq: Vet Med 4th yr standing.

**731 Topics in Equine Medicine P G 1**

A seminar course covering recent "classic" articles from the literature.

Sp Qtr. 1 cl. Prereq: Vet Med 4th yr standing.

**732 Equine Lameness and Gait Abnormalities P 2**

To acquaint the student with conditions of the horse that produce gait abnormalities as the presenting clinical complaint.

Wi Qtr. 2 cl. Prereq: Vet Med 3rd yr standing. Repeatable to a maximum of 4 cr hrs.

**733 Equine Medicine and Surgery P 2**

A course to provide professional students with knowledge to diagnose, treat and prognosticate common medical and surgical diseases of horses.

Au Qtr. 2 cl. Prereq: Vet Med 4th yr standing.

**734 Equine Soft Tissue Surgery P 3**

Practical approach to most frequently encountered soft tissue problems in equine practice. Includes rationale for decision-making, procedures, and comprehensive case management.

Sp Qtr. 3 cl. Prereq: Vet Med 4th yr standing.

**735 Clinical Equine Lameness P 1**

Techniques in equine lameness evaluation. Emphasis on clinical evaluation and cases.

Sp Qtr. 2 lab hrs. Prereq: Vet med 2nd yr standing. This course is graded S/U.

**736 Diseases of Sheep P G 3**

Lecture, discussion, and demonstration of diagnosis, treatment, and prevention of sheep diseases including field surgery and management; goat diseases may also be discussed; time permitting one or more labs will be held.

Wi Qtr. Prereq: 2nd, 3rd, or 4th yr standing.

**738 Pleasure Horse Medicine**

Review of prevention, diagnosis, and treatment of diseases which are common problems of pleasure horses.

Au Qtr. 2 lec. Prereq: Vet Med 2nd, 3rd, or 4th yr standing.

**740\* Analysis of Pharmacological Systems I P G 3**

Analysis of several pharmacological systems using a combination of classical mathematical analysis, model building, and newer analog and digital techniques.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**741 Zoo Animal Medicine P 1**

Discussion and illustrations covering chemical restraint, maintenance of animal health, disease prevention and treatment, past history discussions, and other duties confronting zoo veterinarians.

Wi Qtr. 1 cl. Prereq: Vet Med 2nd, 3rd, or 4th yr standing.

**742\* Analysis of Pharmacological Systems II P G 3**

Continuation of 740; comparison of existing methods for estimating kinetic parameters.

Su Qtr. 3 cl. Prereq: Permission of instructor.

**743 Pocket Pet Medicine P 2**

Basic medicine, surgery, and husbandry for pocket pets, including rabbits, ferrets, guinea pigs, mice, rats, gerbils, chinchillas, and hamsters.

Au Qtr. 2 cl. Prereq: Vet Med 2nd, 3rd, or 4th yr standing.

**744 Reptile Medicine P 3**

Covers husbandry, medicine, anesthesia and surgery for captive reptiles.

Wi Qtr. 2 cl and labs arr. Prereq: Vet Med 3rd or 4th yr standing.

**745 Applications of Microcomputers to Veterinary Medicine P 2**

Hardware, software, and applications to veterinary medicine.

Wi Qtr. 2 cl. Prereq: Vet Med 4th yr standing.

**746 Cattle Diseases P 5**

Medical diagnosis and therapy of individual cattle. The course will teach students medicine and surgery of individual cattle.

Au Qtr. 5 cl. Prereq: Vet Med 2nd, 3rd, or 4th yr standing.

**747 Small Ruminant Diseases P 3**

Diagnosis and therapy of common medical and surgical disorders in small ruminants. This course is organized in an age-related, problem-oriented manner.

Wi Qtr. 3 cl. Prereq: Vet Med 3rd yr standing.

**748 Ruminant Theriogenology P G 3**

Applied clinical reproduction (medicine and surgery) in the bovine, ovine and caprine species. The emphasis is on the individual animal, not the herd/flock.

Wi Qtr. 3 cl. Prereq: VM Coll 605 or DVM degree. This is a lecture course intended to prepare veterinary students for food animal/mixed practice.

**760 Specialized Study in Veterinary Medicine P 1-16**

Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing and permission of instructor. Repeatable to a maximum of 16 cr hrs. To be taken during elective qtr. Cross listed in all veterinary medicine depts. Students must serve at least 4 wks in one experience to receive minimum elective cr. This course is graded S/U.

**761 Advanced Clinical Veterinary Neurology P 2**

Components of a neurologic history including neurologic examination, interpretation, localize a lesion in the nervous system, selection and interpretation of appropriate diagnostic tests.

Wi Qtr. Even years, 2 cl. Prereq: Vet Med 3rd or 4th yr standing.

**762 Clinical Veterinary Ophthalmology P 2**

A problem-based approach to differential diagnosis, final diagnosis, and treatment of ophthalmic diseases in large and small animals.

Wi Qtr. 2 cl. Prereq: Vet Med 3rd or 4th yr standing. Problem-based learning format. This course is graded S/U.

**764 Design and Analysis of Comparative Biomedical Research I P G 3**

Theory and application of basic statistical concepts as they affect design, analysis, and interpretation of biomedical research.

Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing; or permission of instructor. Not open to students with credit for 640 or Prev Med 764 or Vet Prev 764. Cross-listed in Preventive Medicine and Veterinary Preventive Medicine.

**770 Orthopedic Conference P G 2**

Practical application of advanced surgical techniques for treatment of diseases of the skeletal system requiring surgery.

Sp Qtr. 2 conferences per week. Prereq: Vet med 4th yr standing or permission of instructor.

**775 Design and Analysis of Comparative Biomedical Research II P G 3**

Continuation of 764.

Wi Qtr. 3 cl. Prereq: Vet med 2nd, 3rd, or 4th yr standing; or permission of instructor. Not open to students with credit for 641 or Vet Prev 775.

**780 Diagnostic Contrast Radiology P G 1-8**

Routine contrast studies of the digestive, urinary, and nervous systems, with emphasis on techniques and contrast materials; small groups of students will perform each of the procedures.

Au, Wi, Sp Qtrs. Prereq: Vet med 3rd or 4th year or grad standing.

**782\* Pharmacology of Cardiac Drugs P G 3**

Clinical evaluation, pharmacokinetics, and pharmacotherapy of cardiac dysrhythmias.

Wi Qtr. 2 cl. Prereq: 3rd or 4th yr or grad standing. Not open to students with credit for Vet Phys 782.

**790 Advanced Theriogenology Seminar P G 1**

Review of current theriogenology literature placing primary emphasis on experimental design, procedures, and scientific conclusions of reported work; each student will orally describe and prepare a written research protocol.

Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**791 Reproductive Techniques**

Au, Wi Qtrs. Prereq: Vet med 3rd yr standing.

**791.01 Equine Theriogenology P G 4**

The lectures and laboratory experiences are designed to present material covering frequently occurring reproductive abnormalities and reproductive management desirable to obtain maximal reproductive efficiency.

3 lecture hrs and 2 lab hrs. Prereq: Vet Med 3rd yr standing or permission of instructor.

**791.02 Bovine Reproductive Techniques P 2**

Evaluation of the bovine reproductive system including pregnancy diagnosis; breeding soundness evaluation, and artificial insemination techniques.

Wi Qtr. 1 cl, 1-2 hr cl. Prereq: Vet Med 3rd yr standing.

**791.03 Canine Theriogenology P G 2**

This course will present information on canine theriogenology in lecture, discussion and laboratory format.

Wi Qtr. 2- hr lab, 1-hr lecture. Prereq: Vet Med 3rd yr or grad standing. Evaluation will be based on laboratory participation and written examination.

**792 Advanced Theriogenology Laboratory P G 2**

A laboratory for the application of research, diagnostic and therapeutic techniques involving the reproductive system of domestic animals.  
Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 18 cr hrs.

**793 Individual Studies P G 1-8**

A supervised critical investigation of some aspects of animal disease about which there is a mutual curiosity on the part of both the student and faculty.  
Su, Au, Wi, Sp Qtrs. Prereq: Vet med 3rd or 4th yr standing, adequate clinical training and written permission of instructor. Repeatable. This course is graded S/U.

**796 Advanced Studies in Veterinary Clinical Sciences****796.01 Advanced Topics in Equine Surgery G 3**

Practical application of advanced surgical techniques for treatment of diseases of horses.

Wi Qtr. 3 cl. Prereq: Grad students with DVM degree.

**796.02 Advanced Equine Lameness P G 1-8**

Study of the methods used for diagnosis and treatment of diseases causing lameness in horses; includes radiographic and surgical techniques.

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing or written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**796.03 Advanced Gastroenterology P G 1-8**

Study of diagnosis, treatment, and prevention of diseases of the gastrointestinal system.

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing or written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**800 Research Methods G 2**

Development of a research grant including formation, research, statistical analysis of data, preparing, submitting and editing a grant.

Au Qtr. Odd years. 1 cl. Prereq: DVM or equiv or permission of instructor.

**822 Advanced Veterinary Internal Medicine**

Prereq: DVM or equiv or permission of instructor.

**822.01^ Diagnostic Methods G 2**

Diagnostic methodology in comparative veterinary internal medicine.

Wi Qtr. 2 cl. Offered winter quarter every 3 years beginning with Wi 2002.

**822.03 Respiratory Diseases G 3**

Fundamental pathophysiology of disease in comparative veterinary pulmonology.

Au Qtr. 2 cl. Offered autumn quarter every 3 years beginning with Au 2000.

**822.04 Neurology G 3**

Fundamental pathophysiology of disease in comparative veterinary neurology.

Wi Qtr. 2 cl. Offered winter quarter every 3 years beginning with Wi 2001.

**822.05 Cardiology G 3**

Pathophysiology and select clinical diseases in comparative veterinary cardiology.

Sp Qtr. 2 cl. Offered spring quarter every 3 years beginning with Sp 2001.

**822.06^ Nephrology and Urology G 3**

Pathophysiology and select clinical diseases in comparative veterinary nephrology and urology.

Au Qtr. 2 cl. Offered autumn quarter every 3 years beginning with Autumn 2001.

**822.07^ Hematology and Oncology G 3**

Pathophysiology and select clinical diseases in comparative veterinary hematology and oncology.

Sp Qtr. 2 cl. Offered spring quarter every 3 years beginning with Sp 2002.

**850 Seminar in Veterinary Clinical Sciences**

Su, Au, Wi, Sp Qtrs. 1 hr per wk in seminar. Prereq: The degree Doctor of Veterinary Medicine.

**850.04 Clinical Pathophysiology Cases in Small Animal Medicine G 1**

Detailed clinical approach to small animal internal medicine cases to include an understanding of the differential diagnoses and associated pathophysiologic mechanisms of disease.

Su, Au, Wi, Sp Qtrs. Prereq: DVM or equiv or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**850.08 Veterinary Neurology Seminar G 1**

Provide a clinical case oriented approach. Discussion of pathophysiology of diseases of the central and peripheral nervous system; emphasis on comparison between species.

Au, Wi, Sp Qtrs. Prereq: DVM or equiv or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research in Veterinary Clinical Sciences G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Veterinary Medicine, College of**

101A Sisson Hall, 1900 Coffey Road, 292-1171

**510 Principles of Epidemiology P 4**

Descriptive and analytical epidemiology, including design, analysis, and interpretation of results; veterinary economics and information handling techniques; host, agent, and environmental factors in disease causation.

Au Qtr. 3 cl and 2 lab hrs. Prereq: Vet med 1st yr standing.

**520 Topographic Anatomy (Canine) P 5**

Body and its components as forms, relationships, and mechanical functioning.

Au Qtr. 2 cl, 3 2-hr labs. Prereq: Vet med 1st yr standing.

**521 Topographic Anatomy (Equine) P 4**

Continuation of 520.

Wi Qtr. Prereq: Vet med 1st yr standing.

**522 Topographic Anatomy (Food Animals) P 4**

Continuation of 521.

Sp Qtr. 2 cl, 2 lab hrs. Prereq: Vet med 1st yr standing.

**525 Principles of Diagnostics Radiology P 1**

Principles behind the imaging modalities of radiology.

Au Qtr. Prereq: 1st yr standing in vet med.

**526 Principles of Radiographic Interpretation P 1**

Introduction to principles of radiographic interpretation, including general principles as well as specific strategies for musculoskeletal, thoracic and abdominal image interpretation.

Wi Qtr. 1 cl. Prereq: Vet med 1st yr standing.

**530 Microscopic and Developmental Anatomy I P 5**

Study of microscopic and ultrastructural features of cells and tissues, as well as basic fetal development.

Au Qtr. Prereq: Vet med 1st yr standing.

**531 Microscopic and Developmental Anatomy II P 4**

Correlated study of the development, microscopic structure, and ultrastructural morphology of organ systems.

Wi Qtr. Prereq: Vet med 1st yr standing.

**540 Structure and Function of Cells P 5**

Introduction to structure and function at cellular level including physiological principles of homeostasis, energetics, metabolism, enzymes, nutrition, and growth.

Au Qtr. Prereq: Vet med 1st yr standing.

**550 Comparative Biology of Disease**

An interdisciplinary study of the interactions between disease producing agents, body systems, tissues, cells, subcellular units, and selected drugs.

Prereq: Vet med 1st yr standing.

**550.01 Comparative Biology of Disease I P 5**

Wi Qtr.

**550.02 Comparative Biology of Disease II P 5**

Wi Qtr.

**560 Introduction to Veterinary Profession: Ethics and Jurisprudence****560.01 Introduction to Veterinary Professions: Ethics and Jurisprudence P 1**

Problems faced by the practicing veterinarian in relation to the Ohio code, the law, ethics, and communications.

Au Qtr. Prereq: Vet Med 1st yr. standing.

**560.02 Ethics and Jurisprudence in the Veterinary Career P 1**

Focus on analysis of ethical and legal issues associated with the art of veterinary medicine practice and establishment of optimal veterinarian-client-patient relations.

Wi Qtr. Prereq: Vet Med 1st yr. standing.

**561 Pharmacology P 3**

Basic principles of pharmacology, therapeutics, and chemotherapy of disease.

Sp Qtr. 3 cl. Prereq: Vet med 1st yr standing.

**562 Introduction to Anesthesiology P 2**

Introduction to anesthesia.

Sp Qtr. Prereq: Vet med 2nd yr standing.

**563 Introduction to Surgery P 3**

Introduction to surgery.

Sp Qtr. 2 cl, or 1 2-hr lab. Prereq: Vet med 2nd yr standing.

**564 Clinical Veterinary Therapeutics P 3**

Principles of chemotherapy of bacterial, fungal, viral, and parasitic infections; application of basic principles for chemotherapy of neoplastic disease.  
Wi Qtr. 3 cl. Prereq: Vet Med 3rd yr standing.

**600 Cardiovascular System P 6**

A comparative study of the structure, function, and dysfunction of the cardiovascular system including arrhythmias, abnormal flow, congenital disease, etiologic agents, diagnostic methods, and therapeutic approaches.  
Au Qtr. Prereq: Vet med 2nd yr standing.

**601 Respiratory System P 5**

A comparative study of the structure, function, and dysfunction of the respiratory system including reaction to injury, ventilation defects, pneumonias, neoplastic disease, radiological diagnosis, and therapeutic approaches.  
Au Qtr. 5 cl. Prereq: Vet med 2nd yr standing.

**602 Urinary System P 5**

A comparative study of the structure, function, and dysfunction of the urinary system including diseases of the kidney, bladder, and urethra, and their diagnosis and treatment.  
Wi Qtr. 5 cl. Prereq: Vet med 2nd yr standing.

**603 Neurobiology P 6**

Comparative study of structure, stressing functional anatomy, normal physiology, and the examination of the nervous system.  
Sp Qtr. 6 cl. Prereq: Vet med 1st yr standing.

**604 Endocrine System P 5**

A comparative study of the structures, function, and dysfunction of the endocrine system including diseases of each endocrine organ and their relationships to whole body functions.  
Sp Qtr. 5 cl. Prereq: Vet med 1st yr standing.

**605 Reproductive System P 5**

A comparative study of the structure, function, and dysfunction of the reproductive system including etiologic, pathogenic, pathophysiologic, therapeutic, and preventive aspects of reproductive diseases.  
Sp Qtr. 5 cl, 2 labs. Prereq: Vet med 2nd yr standing.

**606 Integumentary System P 5**

A comparative study of the structure, function, and dysfunction of the integumentary system including important infectious and parasitic diseases, diagnosis, treatment, and prevention.  
Sp Qtr. 5 cl, or 4 cl and 2 labs. Prereq: Vet med 2nd yr standing.

**607 Musculoskeletal System P 6**

A comparative study of the structure, function, and dysfunction of the musculoskeletal system including congenital and acquired diseases, their radiographic diagnosis, treatment, and prevention.  
Wi Qtr. 6 cl. Prereq: Vet med 2nd yr standing.

**608 Non-Mammalian and Avian Medicine P 2**

Basic study of avian, reptile, amphibian and fish medicine including anatomy, physiology, pathogenesis of disease, diagnosis, treatment, and disease prevention and control.  
Sp Qtr. Prereq: Vet Med 2nd yr standing.

**609 Digestive System P 6**

A comprehensive study of the gastrointestinal system of domestic animals.  
Wi Qtr. 6 cl or equiv lab hrs. Prereq: Vet Med 2nd yr standing.

**610 Sustainable Parasite Control P 2**

Epidemiological approach to sustainable parasite control for major parasites of the digestive system of large and small animals.  
Sp Qtr. 2 cl. Prereq: Vet Med 2nd yr standing.

**611 Veterinary Preventive Medicine P 4**

Introduction to prevention and control of disease in the human and animal populations with emphasis on the important role of the veterinarian in these activities.  
Wi Qtr. 3 cl, 2 lab hrs. Prereq: Vet med 3rd yr standing.

**612 Introduction to Veterinary Ophthalmology P 3**

Comparative anatomy, histology and physiology of the normal and abnormal eye and adnexa of domestic animals.  
Au Qtr. 3 cl. Prereq: Vet med 3rd yr standing.

**613 Fluid Therapy P 1**

Principles and applications of fluid therapy in small and large animals.  
Wi Qtr. 1 cl. Prereq: Vet med 2nd yr standing.

**615 Small Animal Medical and Surgical Techniques P 4**

Clinical instruction in medical and surgical techniques; application of surgical techniques to treatment of diseases of small animals.  
Au, Wi Qtrs. 1 cl, 16 lab hrs/wk. Prereq: Vet Med 3rd yr. standing. Not open to students with credit for 620.

**616 Food Animal Medicine Techniques and Diagnostic Procedures P 3**

Laboratory instruction in microbiology, parasitology, and radiology; instruction and self-study in minor techniques for large animals.  
Au, Wi Qtrs. 9-13 lab hrs. Prereq: Vet med 3rd yr standing.

**617 Basic Equine Medical and Surgical Procedures P 1**

Laboratory and self-instruction in equine techniques.  
Au, Wi Qtrs. 3-6 lab hrs. Prereq: Vet med 3rd yr standing.

**618 Hemic-Lymphatic System P 5**

A comparative study of the hemic-lymphatic system with emphasis on dysfunction immunologic diseases diagnosis, treatment and prevention of hemopoietic disease.  
Au Qtr. Prereq: Vet med 2nd yr standing.

**619 Alternative to Small Animal Medical and Surgical Techniques P 4**

Surgical instruction to third-year veterinary students who are opposed to performing surgery on animals acquired for that purpose.  
Au Qtr. 3-wk rotation during end-of-quarter break. Prereq: Vet med 3rd yr standing.

**640 Veterinary Toxicology P 3**

Study of toxic substances affecting domestic animals including major types of poisons, sources, mechanisms of action, diagnosis, and treatment.  
Au Qtr. 3 cl. Prereq: Vet med 3rd yr standing.

**646 Veterinary Population Medicine and Public Health P 2**

Study of risk factors affecting health of populations; interrelationships of populations; and control measures to enhance population health.  
Au Qtr. 2 cl. Prereq: Vet med 2nd yr standing.

**689 Practicum in Veterinary Medicine P 0**

Applied veterinary experiences offered to fourth year veterinary students which enhance their skills in areas such as medicine, surgery, dentistry, research, etc.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing on elective qtr. Repeatable. This course is graded S/U.

**690 Veterinary Medicine Senior Clinics P 1-10**

Supplement to senior clinical rotations.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing. This course is graded S/U.

**696 Advanced Studies in Veterinary Medicine P 1-8**

Advanced studies in areas of general veterinary medicine such as international veterinary medicine, education, etc.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 1st yr standing in Vet med.  
This course is graded S/U.

**700 Applied Veterinary Medicine**

A series of clinical studies offered fourth-year veterinary medical students as part of the core curriculum.

Su, Au, Wi, Sp Qtrs. Clinics, seminars, case discussions, and 24-hr patient care responsibilities. Prereq: Vet med 4th yr standing.

**700.01 General Practice P 4**

Clinical instruction in client relations, diagnosis, treatment, and prevention of diseases in out-patients.

Repeatable to a maximum of 32 cr hrs.

**700.02 Small Animal Medicine P 8**

Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of small companion animals.

Repeatable to a maximum of 32 cr hrs.

**700.03 Small Animal Surgery P 8**

The application of principles of surgery to treatment of diseases of companion small animals.

Repeatable to a maximum of 32 cr hrs.

**700.04 Food Animal Medicine and Surgery P 8**

Application of principles of diagnosis, treatment, and prevention of diseases of food animals.

Repeatable to a maximum of 32 cr hrs.

**700.05 Equine Medicine and Surgery P 8**

Application of principles of diagnosis, treatment, and prevention of diseases of equine patients.

Repeatable to a maximum of 32 cr hrs.

**700.06 Equine Field Services P 3**

Application of principles of management, diagnosis, treatment and prevention of diseases in horses in environment in which they are raised. Repeatable to a maximum of 32 cr hrs.

**700.07 Radiology P 4**

Application of radiological principles to diagnosis of diseases of animals. Repeatable to a maximum of 32 cr hrs.

**700.08 Preventive Medicine P 6**

Intensive practical training in preventive medicine applied to public health and animal health; emphasis on herd health management, food hygiene, laboratory animals, public service, and control of livestock and poultry diseases.

Repeatable to a maximum of 32 cr hrs. Seminars, field trips, problem solving.

**700.09 Clinical Anesthesiology P 4**

Provides supervised experience in hospital-based anesthesia practice. Students anesthetize patients for surgical as well as diagnostic procedures. Repeatable to a maximum of 32 cr hrs. Seminars supplement clinical patient management.

**700.10 Large Animal Ambulatory Clinics P 3**

Provides student the experience of working in a large animal clinic, including patient and business management aspects. Provides instruction in production medicine and its role in modern agriculture.

Repeatable to a maximum of 32 cr hrs.

**700.11 Intensive Care Clinics P 3**

Application of principles of diagnosis and therapy to acutely ill companion animal patients.

Repeatable to a maximum of 32 cr hrs.

**700.12 Veterinary Clinical Ophthalmology P 2**

Application of principles of diagnosis and treatment of diseases of the eye to patients of all species.

Repeatable to a maximum of 32 cr hrs.

**700.14 Applied Pathology P 3**

Training in gross dissection and interpretation of gross and microscopic pathologic lesions in animals.

**700.15 Dermatology P 2**

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing. Repeatable to a maximum of 32 cr hrs.

**700.16 Emergency Medicine and Surgery P 6**

Provides students supervised experience in hospital-based emergency practice, both equine and small animal.

Repeatable to a maximum of 32 cr hrs. Seminars supplement clinical patient management.

**700.18 Alternative to Preventive Medicine P 6**

Alternative to 700.08 in which pocket pets are substituted for experience with lab animals, and experience in the Raptor Ward or Ohio Dept. of Agriculture is substituted for work with poultry.

Similar to 700.08, plus 4 hrs/wk for pocket pet alternative and one qtr experience in Raptor Ward.

**711 Applied Veterinary Medicine Options**

A series of field studies offered as electives for fourth year veterinary students to arrange into an elective program in conjunction with a faculty adviser.

Su, Au, Wi, Sp Qtrs.

**711.01 Herd Health Problems P 2,3**

Field instruction and experience in comprehensive disease prevention, nutritional, reproductive, and economic services in modern confinement and conventional livestock production.

**711.02 Public Service Problems P 2,3**

Instruction and experience in animal and human disease (zoonoses) prevention, control, and eradication as provided by public service veterinarians in local, state, and national agencies.

**711.03 Laboratory Animal Problems P 2,3**

Instruction and experience in diagnosis and prevention of laboratory animal disease in operating, breeding, and experimental colonies of various species.

**715\* Veterinary Public Service P G 3**

Practice of public service directed at animal and public health in international, national, state, and local agencies with emphasis on planning, decision making, and budgeting; interaction of veterinarian and other health workers. Au Qtr.

**730 Immunology of Parasitic Infections P G 3**

A discussion of the role of immunity in the production, course, pathogenicity, diagnosis, and control of parasitic infections of man and/or domestic animals.

Au Qtr. 2 cl. Prereq: Basic course in parasitology and immunology; permission of instructor. Not open to students with credit for Microbiol 730. Repeatable to a maximum of 6 cr hrs. Content varies according to major interests of class. Protozoa-arthropods taught in odd yrs; helminths in even yrs. Cross-listed in Microbiology.

**750 Veterinary Practice and Hospital Management P 3**

Basic principles of hospital and practice management including insurance, partnerships, corporations, accounting, taxes, employees, and general management procedures.

Wi Qtr. 3 cl. Prereq: Vet med 3rd or 4th yr standing.

**760 Specialized Study in Veterinary Medicine P 1-16**

Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing and permission of instructor. Repeatable to a maximum of 16 cr hrs. To be taken during elective qtr. Cross listed in all veterinary medicine depts. Students must serve at least 4 wks in one experience to receive minimum elective cr. This course is graded S/U.

**780\* Veterinary Epidemiology P G 3**

The use of descriptive and analytical epidemiologic methods in the solution of infectious and noninfectious disease problems affecting various animal populations.

Wi Qtr. 3 cl. Prereq: 764, Prev med 800 or equiv, or enrolled as prof or grad student in med or vet med.

**785 Biological Research Techniques P G 3**

Lectures and laboratory exercises in laboratory techniques commonly used in biological research.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Advanced standing in biological sciences, Microbiol 601, 602, or equiv, and permission of instructor.

**796 Advanced Studies in Veterinary Preventive Medicine**

A course providing small group instruction in the topics designated.

Su, Au, Wi, Sp Qtrs.

**796.02 Prevention of Communicable Diseases P G 3**

Discussion of the epidemiology of communicable diseases of animals and fundamental approaches used by state and federal animal health agencies for prevention, control, and eradication.

Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing. Repeatable to a maximum of 30 cr hrs.

**796.03 Food-Borne Illnesses and Human Health P G 2-4**

Detailed study of principal zoonotic diseases transmitted by meat foods and food-borne intoxications and infections as related to personal hygiene of food handlers and sanitary food handling practices; the epidemiological approach to problem solving.

Wi Qtr. Prereq: Vet med 3rd or 4th yr standing. Repeatable to a maximum of 30 cr hrs.

**796.04 Zoonotic Diseases P G 2-4**

Epidemiology of zoonotic diseases, including understanding basic prevention and control strategies associated with each disease.

Au Qtr. Prereq: Vet med 2nd, 3rd or 4th yr, or grad standing. Repeatable to a maximum of 30 cr hrs.

## Veterinary Preventive Medicine

239 Sisson Hall, 1900 Coffey Road, 292-1206

**650 Methods for the Critical Review of Biomedical Literature P G 2**

Methods and practice in analyzing strengths and weaknesses of published research and clinical papers; methods and practice in writing scientific critiques.

Au, Wi Qtrs. 1 2-hr cl. Prereq: Professional student in any health discipline or grad standing. This course is graded S/U.

**693 Individual Studies P G 1-6**

Laboratory and library investigations of animal disease problems involving veterinary preventive medicine.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**696 Advanced Studies in Veterinary Preventive Medicine P G 1-6**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**700 Molecular Epidemiology of Infectious Diseases P G 3**

Provides students with the knowledge and skills to study disease outbreaks in livestock using molecular biology techniques.

Sp Qtr. 1 1.5-hr cl. Prereq: 780, Prev Med 800, or permission of instructor.

**710 Introduction to Production Medicine P 2**

This course will introduce the basics of concern that modern food animal practitioners face and the decisions in everyday practice.

Sp Qtr. Prereq: 3rd qtr Vet med 2nd yr standing; Vet med 4th yr standing with permission of instructor. Will serve as a prerequisite for second-year students who wish to take Vet Prev 711.01 the following quarter.

**796.05 Environmental Sanitation P G 3**

Students are provided an environmental sanitation book; discussions related to animal and food hygiene will concentrate on housing, ventilation, waste disposal, soil, water, air, etc.

Sp Qtr. Prereq: Vet med 4th yr standing. Repeatable to a maximum of 30 cr hrs.

**796.06 Disease Control in Dairy Cattle P G 3**

Principles and applications of preventive medicine in establishing and maintaining dairy herd health programs and laboratory practices in mastitis control.

Sp Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: Vet med 2nd, 3rd, 4th yr or grad standing. Repeatable to a maximum of 30 cr hrs.

**796.07 Laboratory Animal Medicine P G 2**

Diseases of sub-human primates, rodents, and exotic animals utilized in biomedical research and teaching; includes preventive medicine and public health as it applies to animal facilities.

Wi Qtr. 2 cl. Prereq: Vet med 3rd or 4th yr or grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**796.08 Diseases of Swine P 3**

Discussion of swine diseases and herd health programs with emphasis on diagnosis, prevention, control and treatment.

Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing. Repeatable to a maximum of 30 cr hrs.

**796.11 Economics of Food Animal Health P G 3**

Discussion of economic principles as they apply to the evaluation of food animal preventive medicine programs and disease.

Sp Qtr. Prereq: Vet med 4th yr standing. Repeatable to a maximum of 30 cr hrs.

**796.12 Literature of Production Medicine P G 1**

Review and discussion of current, selected referred literature in production medicine.

Au, Wi Qtrs. 1-hr cl. Prereq: Vet med 3rd or 4th yr or grad standing. Repeatable to a maximum of 2 cr hrs.

**796.13 Applied Dairy Nutrition U P G 3**

Applied principles of dairy nutrition and the intricacies of the feed industry.

Wi Qtr. 3 cl. Prereq: 796.06 or Anim/Dairy/Poultry Sc 430 or equiv; vet med 3rd or 4th yr, grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**796.14 Swine Production Medicine P 3**

Discussion of the components of a swine production medicine program.

Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing. Repeatable to a maximum of 30 cr hrs.

**797 Wildlife Disease Ecology U P G 2**

Topics in wildlife disease ecology as it relates to habitat quality, population regulation, wildlife management, and its implications for human and domestic animal health.

Sp Qtr. 2 cl. Prereq: Vet Med or grad standing; also, undergrads in the College of Food, Agricultural, and Environmental Sciences, College of Biological Sciences or School of Natural Resources.

**798 Applied Avian Medicine P G 1**

Review and discussion of current avian medicine topics as applied to a production medicine environment, diagnostics and prevention and control strategies.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**810 Principles of Epidemiology G 2**

Discussion of principle theories and philosophies of epidemiology and scientific investigation.

Wi Qtr. 1 2-hr cl. Prereq: Grad standing.

**850 Seminar in Veterinary Preventive Medicine**

Au, Wi, Sp Qtrs.

**850.01 Seminar in Veterinary Preventive Medicine G 1**

Repeatable to a maximum of 3 cr hrs.

**850.02\* Topics in Veterinary Preventive Medicine G 1**

Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**850.03 Seminar in Veterinary Preventive Medicine G 2**

Group discussions of appropriate methodology and statistical analysis to meet objectives of investigators presenting seminars.

Au, Wi Qtrs. 2 cl. Prereq: Grad standing with DVM degree. Repeatable to a maximum of 4 cr hrs.

**999 Research in Veterinary Preventive Medicine G 1-18**

Research thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Vision Science

A400 Starling Loving, 338 West 10th Avenue, 292-2647

**501 Geometrical Optics U P 5**

Paraxial optics, primary optical aberrations, thick lens and mirror systems, ray tracing, field and aperture stops, and prisms.

Au Qtr. 3 cl, 1 4-hr lab. Prereq: Optometry 1st yr standing or major in vis sci.

**503 Geometric and Physical Optics P 5**

Angular magnification, telescopes, apertures and stops, astigmatism, prismatic effects of lenses, diffraction, polarization, interference, electromagnetic waves, quantum optics.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 501.

**511 Introduction to Vision Science U P G 5**

The eye as an optical instrument; the refracting mechanism; the mechanism of accommodation and pupillary contraction; blur of the retinal image; stray light in the eye.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 501 and 608. Not for grad credit to students majoring in vis sci.

**512 Ocular Motility U P G 5**

The motility of the eye; the structure and innervation of the extraocular muscles; mechanisms and analysis and description of eye movements.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: 511. Not for grad credit to students majoring in vis sci.

**520 Measurement of Light and Color U P G 5**

Principles of photometry and colorimetry; light sources; color vision theory; clinic tests of color discrimination; and introduction to visual psychophysics.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 1st yr standing. Not for grad credit to students majoring in vis sci.

**531 Basic Human Anatomy U P 5**

Basic human developmental, neural, and gross anatomy, using models and films, supplemented with prepared specimens.

Au, Wi Qtrs. 3 cl, 2 2-hr lab. Prereq: Optometry 1st yr standing or major in vis sci.

**535 Microscopic Anatomy U P 5**

Microscopic anatomy of cells and tissues, and special histology of the organ systems.

Au, Wi Qtrs. 3 cl, 2 2-hr lab. Prereq: Optometry 1st yr standing or major in vis sci.

**608 Anatomy of the Eye U P G 5**

Human gross anatomy of the head and neck with special emphasis on the eye and orbit; histology and embryology of the eye and associated structures.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: 1st yr Optometry or permission of instructor.

**613 Monocular Sensory Processes U P G 5**

Spatial, temporal and chromatic aspects of visual sensitivity and their relation to photopic and scotopic visual systems and to the neurophysiology of the visual system.

Au Qtr. 4 cl, 1 2-hr lab.

**624 Ocular Form and Function I P 3**

An in-depth study of the basic physiologic functions of the eye including related pathophysiologic mechanisms.

Au Qtr. 3 cl. Prereq: Optometry 2nd yr standing or permission of instructor.

**625 Ocular Form and Function II P 3**

Continuation of 624.

Wi Qtr. 3 cl. Prereq: 624.

**693 Individual Studies in Vision Science P G 1-15**

Properly qualified students may perform minor investigations or add to their knowledge and technique.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dean. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**715 Binocular and Spatial Vision P G 5**

The study of the sensory processes involved in the coordination of the two eyes in the perception of space and the sensorimotor processes of spatial localization.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 2nd yr standing.

**716 Visual Perception P G 3**

Traditional topics in visual perception; "higher brain function" and behavioral neuroscience of vision; brain disorders of vision and visual perception.

Au, Wi Qtrs. 3 cl.

**731 Occupational and Environmental Vision P G 4**

Visual testing in industry; relation of vision to performance, comfort, and safety; visual requirements for licenses; eye hazards and protection; compensation for vision loss.

Su Qtr. 3 cl, 1 2-hr lab. Prereq: 520 or major in vis sci.

**732 Vision of Children P G 5**

Visual-survey methods; the prevalence of visual anomalies and eye diseases in children; basic visual skills required in school and methods for their improvement.

Au Qtr. 3 cl, 1 4-hr lab. Prereq: Optometry 3rd yr standing or major in vis sci.

**733 Optometric Gerontology P G 4**

A survey of visual and systemic changes associated with aging, with emphasis on ophthalmic examination and rehabilitative techniques.

Wi Qtr. 3 cl, 2 2-hr lab. Prereq: Optometry 3rd yr standing or major in vis sci.

**780 Topics in Vision Science**

Experimental and theoretical aspects of areas of current interest in vision science.

Su, Au, Wi, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: Optometry 3rd yr standing or major in vis sci.

**780.01 Ocular Anatomy P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.02 Ocular Physiology P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.03 Corneal Physiology P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.04 Microbiology of the Eye P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.05 Experimental Design P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.06 Psychophysics of Vision P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.07 Paradigm of Vision Science P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.08 Ocular Biometrics P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.09 Visual Optics P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.10 Environmental Vision P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.11 Image Evaluation P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.12 Geometrical Optics P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.13 Physical Optics P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.14 Oculomotor Systems P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.15 Binocular Visual Processes P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.16 Monocular Visual Processes P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.17 Photochemistry of Vision P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.18 Color Vision P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.19 Stimulus Specification P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.20 Neurophysiology of Vision P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.21 Visual Electrometrics P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**780.22 Physiological Optics P G 1-5**

Repeatable to a maximum of 20 cr hrs.

**795 Seminar P G 1-5**

A series of seminars dealing with new developments in the various phases of vision science.

Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**801 Optics of the Eye and Specification of the Visual Stimulus G 5**

Ocular image-forming mechanisms of the eye and optics of ophthalmic instrumentation, specification of light, calibration and control of intensity and spectral composition of light.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: 501, 511, 520 or permission of instructor.

**802 Ocular Motility and Binocular Vision G 5**

Advanced topics on eye movements, intraocular motility, sensorimotor aspects of visual perception and binocular vision.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 512, 715, 716 or permission of instructor.

**803 Monocular Sensory Processes of Vision G 5**

Spatial, temporal and spectral properties of photopic and scotopic vision; color vision and color deficiencies; visual development; clinical psychophysics.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 511, 520, 613 or permission of instructor.

**804 Anatomy and Physiology of the Visual System G 5**

Advanced anatomy, physiology and neurology of the visual system.

Su Qtr. 4 cl, 1 2-hr lab. Prereq: 608, 624, 625 or permission of instructor.

**810 Image Evaluation G 3-5**

Evaluation of optical systems and image forming systems including the eye by objective and subjective methodologies.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 801 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**811 Color Vision G 3-5**

Spectral sensitivity; color vision deficiency, color matching and color appearance; theory and laws of color mixture.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 803. Repeatable to a maximum of 12 cr hrs.

**812 Neurophysiology of Vision G 3-5**

Phototransduction; photoreceptor recordings; horizontal, bipolar and amacrine cells; ganglion and LGN cells; M and P pathways and relationship to optic nerve disorders; striate and extrastriate cortex.

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 804. Repeatable to a maximum of 12 cr hrs.

**813 Physiology of the Eye G 3-5**

Recent developments in the respiration, metabolism, and mechanics of ocular tissues, and the aqueous dynamics of the eye.

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 804. Repeatable to a maximum of 12 cr hrs.

**815 Binocular Vision and Perception G 3-5**

Study of binocular vision and visual spatial localization including the perception of distance, direction, form and motion.

Su, Au, Wi, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: 802. Repeatable to a maximum of 12 cr hrs.

**820 Specification of the Visual Stimulus G 3-5**

Assessment of critical detail of visual tasks to determine visual standards and appropriate level and distribution of light; study of apparatus to control intensity and composition of visual stimuli, measurement of light.

Su, Au, Wi, Sp Qtrs. 3 cl, 4-hr lab. Prereq: 801 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**894 Group Studies in Vision Science G 1-5**

Group studies on special problems in vision science.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in vis sci. Repeatable to a maximum of 30 cr hrs.

**999 Research in Vision Science G 1-18**

Research for thesis on dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Vocational Education, Comprehensive

208 Agricultural Administration Building, 2120 Fyffe Rd, 292-6321

**893 Individual Studies in Vocational Education G 1-3**

Individual research and study on approved topics in comprehensive vocational education.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**894 Group Studies in Vocational Education G 1-3**

Selected topics directly related to comprehensive vocational education.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**999 Research in Vocational Education G 1-18**

Individual dissertation research on problems of significance in comprehensive vocational education.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of adviser. Repeatable. This course is graded S/U.



## Welding Engineering

210 Baker Systems Engineering, 1971 Neil Avenue, 292-6239

### 293 Individual Studies in Welding Engineering U 1-5

Topics in welding engineering of individual interest at the undergraduate level; must be arranged with a member of the department faculty.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 300 Survey of Welding Engineering U 3

Principles of welding engineering, including processes, materials effects, design, and quality assurance and codes.

Au Qtr. 3 cl. Prereq: Concur Physics 133, minimum CPHR of 2.00, acceptance as Welding Engineering major.

### 350 Introductory Welding Laboratory I U 1

Demonstration of a fundamental working knowledge of manual arc welding.

Au Qtr. 1 3-hr lab cl. Concur: 300 and acceptance as a Weld Eng major or written permission of chairperson.

### 351 Introductory Welding Laboratory II U 1

Demonstration of a fundamental working knowledge of semi-automatic arc welding.

Wi Qtr. 1 3-hr lab. Concur: 350 and acceptance as a Weld Eng major or written permission of chairperson.

### 400 Chemistry of Welding and Joining Processes U 3

Study of the chemical principles occurring during joining processes.

Sp Qtr. 3 cl. Prereq: 300.

### 489 Industrial Experience I U 1

Experience in an industrial organization and the submitting of an acceptable report on the work done.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. One qtr full time or equiv part-time field experience.

### 500 Physical Principles in Welding Engineering I U 3

Study of the application of electric and magnetic principles in welding engineering.

Au Qtr. 3 cl. Prereq or concur: 300 and Elec Eng 300.

### 550 Physical Principles in Welding Engineering I-Laboratory U 1

Experimentation with the application of electric and magnetic principles in welding engineering.

Au Qtr. 1 3-hr lab. Concur: 500 and a second writing course.

### 600 Physical Principles in Welding Engineering II U G 3

Study of physical principles in welding processes.

Wi Qtr. 3 cl. Prereq: 500, Eng Mech 440 or Mech Eng 420 or 440. GEC course.

### 601 Welding Processes and Applications U G 3

Solid state welding, resistance welding and welding applications.

Sp Qtr. 3 cl. Prereq: 600. Safety related equipment and procedures required.

### 602 Fundamentals of Resistance Welding Processes U G 3

The fundamentals of the resistance welding process will be presented; distinctions made between variations in processes. Emphasis will also be placed on process systems.

Sp Qtr. Prereq: 601.

### 605 Principles of Welding Process Control U G 3

Study of principles and practical application of control systems and control elements of welding processes.

Wi Qtr. 3 cl. Prereq: 500 or permission of instructor.

### 610 Introduction to Welding Metallurgy U G 3

Application of physical metallurgy principles to nonequilibrium thermo/mechanical conditions associated with welding.

Sp Qtr. 3 cl. Prereq: Mats&En 542.01. Safety related equipment and procedures required. GEC course.

### 611 Welding Metallurgy I U G 3

Study of the metallurgy and welding of transformable steels.

Au Qtr. 3 cl. Prereq: 610 or permission of instructor. Safety related equipment and procedures required.

### 612 Welding Metallurgy II U G 3

Welding metallurgy and weldability of stainless steels, aluminum alloys and nickel- and cobalt-based superalloys; joining of polymers and polymer-based composites.

Wi Qtr. 3 cl. Prereq: 611. Safety related equipment and procedures required.

### 620 Engineering Analysis for Design and Simulation U G 5

Fundamentals of engineering analysis of heat flow, thermal and residual stresses, and fracture and fatigue with applications to design and simulation in welding and manufacturing.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: Eng Mech H210 or 220 or 400, or Mech Eng H210 or 400 or 410. Not open to students with credit for Ind Eng 625. Cross-listed with Ind Sys Eng 625.

### 621 Welding Engineering Design U G 4

Design fundamentals applicable to welded structures. Hands-on PC-based design laboratory.

Wi Qtr. 3 cl, 1 3-hr cptr lab. Prereq: 620 and Eng Mech 440 or Mech Eng 420 or 440.

### 631 Nondestructive Evaluation U G 4

Principles of nondestructive evaluation and inspection of materials and structures for engineering plus laboratory experience with principles, equipment, techniques and interpretation of nondestructive tests.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 3rd yr standing in ENG or equiv with written permission of instructor. Safety related equipment and procedures required.

### 635 Fundamentals of Radiography U G 4

Intended for engineering students who require knowledge of non-destructive testing methods; basic industrial radiographic methods such as film and real time, radiography, and image analysis are included.

Sp Qtr. 3 cl, 1-hr lab. Prereq: 631 or written permission of instructor.

### 636 Fundamentals of Optical and Electromagnetic NDE U G 4

An introduction to basic principles of optics and electromagnetic fields and waves will be given with special emphasis on application of these principles to nondestructive evaluation.

Wi Qtr. 3 cl, 3-hr lab. Prereq: 631 or written permission of instructor.

### 638\*\* Introduction to Ultrasonics U G 4

Ultrasonic waves in solids and fluids; ultrasonic generators and systems; physical ultrasonics; applications of ultrasonics.

Au Qtr. 4 cl. Prereq: Eng Mech 440 or Mech Eng 420 or 440; Math 255 or 415. Not open to students with credit for 634, Eng Mech 634, or Mech Eng 638. Cross-listed in Mechanical Engineering.

### 640 Welding Production U G 3

Cost-effective production of quality-welded structures.

Wi Qtr. 3 cl. Prereq: 601; 4th yr standing in ENG or permission of instructor. Not open to students with credit for 642.

### 641 Welding Codes, Specifications, and Standards U G 3

Consideration of the welding requirements in a variety of industry and government documents including examples from the aircraft, automotive, maritime, piping, and pressure vessel fields.

Sp Qtr. 3 cl. Prereq: 4th yr standing in ENG or permission of instructor.

### 651 Welding Process Applications - Laboratory U G 1

Laboratory experience in engineering aspects of welding.

Sp Qtr. 1 3-hr lab. Concur: 601. GEC course.

### 655 Welding Process Controls I - Laboratory U G 1

Experimentation with the applications of process controls in welding engineering.

Wi Qtr. 1 3-hr lab. Concur: 605.

### 656 Robot Programming and Operations U G 1

Types and applications of industrial robot systems; lab experience in robot operation and programming. Richardson.

Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq: Weld Eng or Ind Eng major and written permission of instructor.

### 657 Advanced Topics in Robotic Programming U G 1

Projects are completed on robotic welding systems; projects provide understanding to evaluate and select robotic welding systems.

Au, Wi, Sp Qtrs. 1 cl, 3 lab hrs. Prereq: 656 and permission of instructor.

### 661 Welding Metallurgy I Laboratory U G 1

Laboratory experience in welding metallurgy.

Au Qtr. 1 3-hr lab. Concur: 611. GEC course.

### 662 Analysis of Non-Ferrous and High Alloy Welds U G 1

Characterization of weld structures in stainless steel, aluminum alloys, and nickel-based superalloys.

Wi Qtr. 1 3-hr lab. Prereq: 610; concur: 612. GEC course.

### 681 Nondestructive Evaluation Seminar U G 1

Theory and application of nondestructive evaluation as presented in lectures by faculty, staff, graduate students, and guest speakers.

Au, Wi, Sp Qtrs. 1 cl. Prereq: 4th yr standing in ENG. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**690 Capstone Welding Design I U G 1**

Group design projects building on all aspects of welding engineering.  
Au Qtr. 1 cl. Prereq: 4th yr standing in weld eng. GEC course.

**691 Capstone Welding Design II U G 2**

Group design projects building on all aspects of welding engineering.  
Wi Qtr. 2 cl. Prereq: 690. GEC course.

**692 Capstone Welding Design III U G 1**

Group design projects building on all aspects of welding engineering.  
Sp Qtr. 1 cl. Prereq: Permission of instructor. GEC course.

**694 Group Studies in Welding Engineering U G 1-15**

The student must register for particular topics from fields of welding engineering, the topics, cr hrs, and instructor will be announced in quarter previous to the quarter offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**701\* Solid State Welding U G 3**

The welding and joining of metals in the solid state with emphasis on processes and metallurgical principles.

Sp Qtr. 3 cl. Prereq: 600, Eng Mech 440, or Mech Eng 420 or 440, and Mat Sc&En 542.01.

**702 Fundamentals of Resistance Welding U G 3**

Fundamentals of the resistance welding process with emphasis on process analysis.

Au Qtr. 3 cl. Prereq: 601.

**703 Brazing and Soldering U G 3**

Brazing and soldering processes with emphasis on physical and metallurgical principles, materials, design, and application considerations.

Wi Qtr. 3 cl. Prereq: 504 or permission of instructor.

**704 High Energy Density Welding Processes U G 3**

Theory and practices in laser, electron beam, plasma, and other high energy density welding processes; process demonstrations.

Au Qtr. 3 cl. Prereq: 600.

**705 Advanced Welding Process Control Systems U G 3**

Principles of continuously variable and digital control systems for manual, mechanized, automatic, and feedback operation of arc, resistance, and advanced welding processes.

Sp Qtr. 3 cl. Prereq: 605 or permission of instructor.

**706 Joining of Plastics and Composites U G 3**

Theory and practice in joining of polymers and polymeric composites, including processes and methods for welding, mechanical joining, and adhesive bonding.

Au Qtr. 3 cl. Prereq: 620 or equiv.

**713 Joining of Specialty Metals U G 3**

Theory and practice of joining specialty metals is presented, with emphasis on joinability, joining processes, and procedures and applications.

Wi Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: 610

**714 Weldability U G 3**

Weldability of alloy systems-steels, stainless steels, nickel, aluminum, and titanium alloys-with reference to basic metallurgical phenomena, weldability testing, and interpretation; individual projects and presentations.

Sp Qtr. 3 cl. Prereq: 611; prereq or concur: 612.

**715 Special Topics in Welding Engineering U G 3**

The course will review the nature of weld defects and their prevention. Other topics include failure analysis and weldability testing.

Sp Qtr. Prereq: 610. Student must have basic knowledge of physical metallurgy principles.

**723 Analysis of Welding Systems U G 3**

Development of an analytical and empirical base for the selection of optimum parameters in the design and fabrication of welded structures.

Au Qtr. 3 cl. Prereq: 620.

**732 Ultrasonic Nondestructive Evaluation U G 4**

Principles of ultrasonic wave interaction with material structures with emphasis on nondestructive measurements of material discontinuities, properties, and non-uniformities.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 631 or permission of instructor, and Math 255 or 256 or 416.

**733 Electromagnetic Nondestructive Evaluation U G 4**

Fundamentals of electromagnetic fields and waves with emphasis on eddy current NDE methods; electromagnetic generation of ultrasonic waves and optical methods.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 631 or permission of instructor, and Math 255 or 256 or 416.

**736 Health and Safety U G 3**

Major health and safety hazards associated with welding and cutting; radiation, fumes, gases, and noise; discussion of hazard origin, technological control, physiological effects, and regulatory control.

Wi Qtr. 3 cl. Prereq: 601 or permission of instructor.

**740 Fitness-for-Service of Welded Structures U G 3**

The interrelationship of design, fabrication, nondestructive evaluation, fracture mechanics, and reliability concepts in establishing the overall fitness-for-purpose of welded structures.

Sp Qtr. 3 cl. Prereq: 620 or permission of instructor.

**755 Welding Process Control Laboratory U G 1**

Laboratory experiments in basic instrumentation and control systems for welding processes such as arc, resistance, electron-beam, and others.

Sp Qtr. 1 3-hr lab. Concur: 705.

**H783 Undergraduate Honors Program Research U 1-3**

Honors program students are offered the opportunity to pursue independent project/research. Student presentations and thesis writing included.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in weld eng (or equiv). Repeatable to a maximum of 6 cr hrs. Students must have a GPA of at least 3.4 and permission of instructor.

**793 Individual Studies in Welding Engineering U G 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**795 Graduate Seminar U G 1**

Presentations and discussion by graduate students and involved outside speakers on thesis research and current problems in welding engineering.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad or sr standing in weld eng. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**801 Welding Arc Physics G 3**

Theoretical study of the physics of welding arcs including processes of current maintenance and heat dissipation, arc radiation and spectre, arc stability, magnetic fields, and flows.

Wi Qtr. 3 cl. Prereq: 600 or permission of instructor.

**804 Advanced Laser Material Processing G 3**

Advanced topics in laser materials processing. Resonant and non-resonant phenomena in laser-materials interaction.

Wi Qtr. 3 cl.

**806\* Advanced Welding of Plastics and Composites G 3**

Theoretical study of welding of thermoplastics and composites, including analysis of the basic welding steps and modeling, optimization and control of welding processes.

Wi Qtr. 3 cl. Prereq: 706 or permission of instructor.

**821 Residual Stresses and Distortion in Weldments G 3**

A study of the formation mechanisms of residual stresses and distortions; mathematical formulations and experimental analysis methods for distortion control.

Wi Qtr. 3 cl. Prereq: 723.

**835 Advanced NDE Methods G 4**

Modern physical principles as basis for quantitative nondestructive evaluation techniques; includes wave-matter interaction, ultrasound interaction with light, optical, and acoustical holography.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 631, 732, and 733, or permission of instructor; and Math 512.

**894 Group Studies in Welding Engineering G 2-5**

Special topics in welding engineering; the particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**999 Research in Welding Engineering G 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Women's Studies

286 University Hall, 230 North Oval Mall, 292-1021

The Black Woman: Her Role in the Liberation Struggle  
See AfAm&ASt 230.

Women in East Asian and Asian-American Literature  
See Comp Std 314.

Women and Religion  
See Comp Std 315.

Introduction to Women's History: The American Experience  
See History 325.

Language and Gender  
See Linguist 330.

Communication and Gender in Interpersonal and Organizational Settings  
See Communic 332.

Communication, Gender, and Society  
See Communic 362.

Women and Music  
See Music 685.

Women in Ancient Hebrew Literature  
See Hebrew 374.

Women Artists of the Western World  
See Hist Art 400.

Sociology of Women  
See Sociol 435.

Women in Greece and Rome  
See Classics 508.

Women, Crime, and the Legal System  
See Sociol 510.

Women and Politics  
See Polit Sc 512.

Women and the Law  
See Polit Sc 514.

Women in the Western World: Ancient Civilization to the Industrial Revolution  
See History 523.

Women in the Western World: the Industrial Revolution to the Present  
See History 524.

Topics in Women's History  
See History 525.

Psychology of Women  
See Psych 543.

Women in Literature  
See English 592.

Women, Culture, and Development  
See Anthrop 597.02.

Biology of Human Diversity: Race, Gender, and Ethnicity  
See Biology 597.

Women's Sport History  
See Edu PAES 610.

Special Topics in Cultural Anthropology: Anthropology of Women

See Anthropology 620.02.

Women in French Literature  
See French 663.

Women in Rural Society  
See Rural Soc 678.

Studies in Women's History  
See History 781.

Women, Technology, and Education  
See Edu-P&L 853.

Black Role Models: Racism and Sexism  
See AfAm&ASt 865.

Seminar in Women's History  
See History 881.

### 201 Introduction to Women's Studies in the Humanities U 5

Examination of the feminist viewpoint through interdisciplinary studies in the humanities; the relationship of feminist concepts, methods, and analyses to traditional, academic disciplines in humanities.

Su, Au, Wi, Sp Qtrs. 5 or 2 2.5-hr cl. H201 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 202 or 210. GEC arts and hums cultures and ideas, and social diversity course.

### 210 Women, Culture, and Society U 5

Interdisciplinary analysis of women, culture, and society; topics include cultural images, socialization, media, sexuality, sexual orientation, work, family, politics, violence, inequality, and racial diversity.

Su, Au, Wi, Sp Qtrs. 5 cl or 2 2-hr cl. H210 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 201 or 202. GEC soc sci individuals and groups, and social diversity course.

### 294 Group Studies U 1-5

Special studies not otherwise offered.

5 cl. Repeatable to a maximum of 15 cr hrs.

### H296 Topics in Women's Studies U 5

In-depth study in women's studies focusing on current issues in feminist analysis.

Repeatable to a maximum of 10 cr hrs.

### 300 Introduction to Feminist Analysis U 5

Introduction to principles of feminist analysis as they apply to a range of contemporary issues and institutions.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: One of the following: 201, 202, 210, 215, 367.01, 367.04. Not open to students with credit for 299.

### 317 Women and Film U 5

Representations of women as sex objects, starlets, social activists, and militant feminists in film; cinematic techniques and devices in films about or by women.

2 2-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for Comp Std 317. GEC arts and hums VPA course.

### 325 Issues in Women's Health U 5

An interdisciplinary inquiry into the issues affecting women's health and the politics of gender in the medical health care profession.

2 2.5-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor.

### 326 Women and Addiction: A Feminist Perspective U 5

An interdisciplinary feminist focus on addictive consequences of sex-role socialization, substance abuse, addiction in intimate relationships, and eating disorders; medical/social consequences of addiction among women.

2 2.5-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for 301.

### 340 Latina Experience in the U.S. U 5

Introduces the important and far reaching issues of Latinas today, recognizing the contributions of these women to U.S. history, the women's movement and feminism.

Au, Wi, Sp Qtrs. 2 2.5-hr cl. Prereq: 201 or 210 or 367.01 or 367.04, or permission of instructor.

**350 Feminist Perspectives on Women and Violence U 5**

Use of a feminist, interdisciplinary approach to analyze selected national or international issues of interpersonal and institutionalized violence in which women are victims or perpetrators.

2-2-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for this topic under 494.

**367 Second Writing Course**

Prereq: English 110 or 111 or equiv, and soph standing. GEC second writing and social diversity courses.

**367.01 U.S. Women Writers: Text and Context U 5**

Writing and analysis of U.S. women's experience, with emphasis on interdisciplinary relationships between literature and U.S. women's socio-political history.

Su, Au, Wi, Sp Qtrs. 5 cl or 2 2.5-hr cl. H367.01 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 215 or 367 or H367.

**367.04 Black Women Writers: Text and Context U 5**

Writing and analysis of black women's literary representations of issues in United States social history.

Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for 215 or AfAm&AST 367.04. Cross-listed in African-American and African Studies.

**370 Varieties of Female Experience: Lesbian Lives U 5**

A survey of cultural, social, and political issues related to historical and contemporary lesbian experience in the United States.

2-2-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. GEC social diversity course.

**372 Modern Arabic Literature in Translation U 5**

Reading and analysis of representative works of the 19th and 20th centuries; discussion of development of major movements and genres in modern Arabic literature.

Au, Wi, Sp Qtrs. 2-2-hr cl. H372 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for Arabic 273 or 372. Cross-listed in Arabic. GEC arts and hums lit course.

**375 Women and Art in Western Europe and the U.S.: From the Renaissance to the Present U 5**

Women as producers, patrons, and audiences of art from the Renaissance to the present; analysis of visual images of women in historical, racial, and class contexts.

2 2-hr cl. Prereq: 300 or 5 cr hrs of wom stds course work or permission of instructor.

**389 Theory and Practice of Peer Outreach in Women's Studies U 5**

Designed to prepare undergraduate students with the theoretical and practical skills necessary to present women's studies topics to middle and high school youth.

Au, Wi, Sp Qtrs. 2.5-hr cl, 50 hrs field work. Prereq: 201 or 210 or permission of instructor. This course is required training for students who participate in the women's studies peer education outreach program (Peer Power).

**494 Group Studies U 1-5**

Special studies not otherwise offered; topic varies; students should consult department current course listing.

Au, Wi, Sp Qtrs. Arr. Prereq: 201 or 210 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**505 Women's Worlds: Cross-Cultural Analysis U G 5**

An interdisciplinary, cross-cultural feminist analysis of women's roles, status, history, and cultural productions in the Third World.

2 2-hr cl. Prereq: 10 cr hrs in wom stds course work or permission of instructor. Not open to students with credit for 597. GEC international issues course (non-western or global).

**510 American Women's Movements U 5**

An interdisciplinary analysis of the American women's movements, including historical, literary, sociological, and theoretical perspectives.

2 2.5-hr or 5 cl. H510 (honors) may be available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 10 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for 400. GEC social diversity course.

**517 Women Film Directors U G 5**

The works of women film directors from the 1940s to the present, with particular attention to the ways their works embody preoccupations with the representation of women's experience and a female point-of-view.

Wi Qtr. 2 2-hr cl. Prereq: 201 or 210, and 317.

**520 Women of Color and Social Activism U G 5**

Examination of multiple forms of social activism among women of color from various parts of the world concerning local, national, and international issues.

2 2-hr cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. GEC social diversity course.

**524 Women and Work U G 5**

The social, cultural, and historical factors that influence women's work in the U.S. and the multiple ways work is gendered.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 5 cr hrs in wom's stds, or permission of instructor; AfAm&AST 101 or 230, History 237 or 325, or Sociol 101 recommended. Not open to students with credit for 424.

**526 Feminist Perspectives on Mental Health Policy U G 5**

Current feminist debates in the psychological sciences and mental health policy; gendered analysis of the history of mental health and public policy.

2 2-hr cl. Prereq: 300 or 10 cr hrs of wom stds course work or permission of instructor.

**535 Gender and Science U G 5**

Examination of relations between gender and science; topics include gendering of "science" and "nature," biological theories of sexual inequality, feminist critiques of science and technology.

2 2-hr cl. Prereq: One course in comp std or wom stds. Not open to students with credit for Comp Std 535. Cross-listed in Comparative Studies in the Humanities.

**540 Studies in Black Women Writing Culture U G 5**

Interdisciplinary feminist study of selected historical and cultural movements through black women's writing; topics vary by genre and by era—civil rights, Harlem Renaissance, abolition.

2 2-hr cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**550 Introduction to Western Feminist Theory U G 5**

An introduction to and analysis of major texts of Western feminist theory as it has developed and changed since the Enlightenment.

5 cl or 2 2.5-hr cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. GEC third writing course.

**575 Issues in Contemporary Feminist Theory U G 5**

Examination of particular contemporary issues which have crucial implications for feminist inquiry (topics vary).

2 2.5-hr cl. Repeatable to a maximum of 5 cr hrs. Prereq: 10 cr hrs of wom stds course work or permission of instructor.

**589 Internship in Feminist Theory and Collective Action U 5**

Field-based learning experience to explore the relationship between feminist theory and collective action; use of field work and class discussion to relate theory to practice.

Au, Sp Qtrs. 1 3-hr cl, minimum 10 hrs field work per week. Prereq: 299 or 300, 15 cr hrs in wom stds course work, and permission of instructor. Not open to students with credit for 489. Notify instructor of intent to take course by beginning of jr yr.

**620 Topics in Feminist Studies U G 5**

Interdisciplinary in-depth analysis of selected topics in feminist research and interpretation; topic varies quarterly.

Su, Au, Wi, Sp Qtrs. 2 2.5-hr cl or 5 cl. Prereq: 201 or 210, and at least 10 additional cr hrs in wom stds or written permission of instructor. Repeatable to a maximum of 30 cr hrs. Contact the department for information.

**623 African Women U G 5**

A multi-cultural exposure to the varying cultures, situations, and dilemmas in which African women find themselves in the 20th century and to their actions in confronting their problems.

Au Qtr. 2 2-hr cl. Prereq: Recommended 505 for undergrads.

**624 Women and Social Change in Latin America U G 5**

Feminist perspectives to introduce students to Latin American women's experiences and reality as perceived by those who study women and by women themselves.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 299 or 300 and 5 cr hrs in wom stds at the 300 level or above or related course work; or permission of instructor.

**626 Gender and Public Policy U G 5**

Examination of public policy from perspectives grounded in feminist political theory, history, legal studies, and cultural studies.

Au Qtr. 2 2-hr cl. Prereq: 299 plus 5 additional wom stds cr hrs at 300 or above; or grad standing.

**670 Gender Discrimination U G 5**

Legal, social, and public policy trends; analysis of gender-related constitutional law and relationship to social, political, and economic developments; meaning and significance of sex discrimination.

Wi Qtr. 2 2-hr cl. Prereq: 10 cr hrs of wom stds course work, or permission of instructor. Not open to students with credit for Sociol 670A. Cross-listed in Sociology.

**693 Individual Studies U G 1-5**

Students may register for individual directed study in subjects not covered in regular course work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr standing or above; permission of instructor. Repeatable to a maximum of 15 cr hrs. No more than 5 cr hrs may be applied to women's studies major or minor. This course is graded S/U.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Introduction to Graduate Studies G 5**

Introduction to women's studies as an academic field of study and an orientation to the graduate program, facilities, resources, and people.

Au Qtr. 1 3-hr lec, 1 1-hr rec. Prereq: Grad standing in wom stds.

**702 Teaching Women's Studies G 2**

Assist graduate students in meeting instructional responsibilities and developing necessary skills for college level teaching in women's studies.

Au Qtr. 1 2-hr cl. Prereq: Grad standing in wom stds and TA. This course is graded S/U.

**710 Theorizing Difference G 5**

Examines theories of difference based on race, ethnicity, nationality, sexuality, and class and the ways difference defines and modifies women's realities.

Wi Qtr. 2 2-hr cl. Prereq: 10 cr hrs of wom stds course work and permission of instructor.

**720 Theorizing Gender, Power, and Change G 5**

Examination of feminist theoretical approaches to the material conditions of women's lives and the changing structures of social, economic, and political power.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in wom stds or permission of instructor.

**740 Theorizing Gender Representation G 5**

Designed to introduce graduate students to the central debates that have characterized feminist theories of representation of the last two decades.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing in wom stds or permission of instructor.

**742 Feminism and the Cinema G 5**

Study of the relationship between feminist film theory and criticism and specific genres, historical periods, and issues in cinematic representation.

2 2-hr cl. Prereq: Grad standing in wom stds or permission of instructor.

**775 Studies in Feminist Theory**

A series of courses which examine the relationships between feminist theories and other significant explanatory systems in the Western cultural tradition.

2 2-hr cl. Prereq: 5 cr hrs in wom stds at the 500 or 600 level, or permission of instructor. Not open to students with credit for these topics under 700. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions, including cr hrs earned in AfAm&ASt 775.03.

**775.01 Marxism and Feminist Theory G 5**

Traces the development of Marxist thought in relation to feminist theory from the 19th century to the present with emphasis on key issues.

Repeatable to a maximum of 20 cr hrs.

**775.02 Psychoanalysis and Feminist Theory G 5**

An analysis of major psychoanalytic writings about women and feminist responses to them.

Repeatable to a maximum of 20 cr hrs.

**775.03 Feminism and Black Political Thought G 5**

Theoretical analysis of the politics and perceptions of womanhood in the black community.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. Cross-listed in African American and African Studies.

**H783 Honors Research U 3-5**

A program of individual study for undergraduate honors students; may include individual conferences and reports; requires presentation and oral defense of an honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a CPHR of at least 3.50 in women's studies courses; permission of thesis adviser and Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 8 cr hrs and 2 qtrs of enrollment are required of candidates for the BA degree with distinction in women's studies. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments offer courses on subjects of mutual interest. Repeatable to a maximum of 15 cr hrs.

**796 Seminar****796.20 Women and Law G 5**

Introduction to basic feminist theories, application of the theories to a series of legal issues involving women researching and writing of an original seminar paper on a topic related to women and law.

5 qtr hr course across Wi and Sp. 2 hrs once a week. Not open to students with credit for Law 796.20. Cross-listed in Law.

**863 Women's Studies Practicum G 3-5**

Internship placement in an agency or organization serving women to provide an opportunity to integrate feminist theory and practice.

Su, Au, Wi, Sp Qtrs. Prereq: 700 and at least 10 additional cr hrs of wom stds course work and permission of instructor. Repeatable to a maximum of 10 cr hrs. Each hr of cr corresponds to 3 hrs per wk of internship for 10 wks. This course is graded S/U.

**880 Research Seminar G 3**

The first quarter of a two-quarter seminar in which students will research and write an original scholarly paper and critique the work of other students.

Au Qtr. 1 3-hr cl. Prereq: Permission of instructor. This is a Progress course. Credit given upon completion of 881.

**881 Research Seminar G 3**

The second quarter of a two-quarter seminar in which students will research and write an original scholarly paper and critique the work of other students.

Wi Qtr. 1 3-hr cl. Prereq: 880. This is a Progress course.

**890 Interdepartmental Studies in Critical Theory G 5**

Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.

Sp Qtr. 2 2-hr or 5 cl. Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in Comparative Studies in the Humanities, English, French, German, and Spanish.

**998 Research in Women's Studies: Thesis G 1-15**

Directed research for master's thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Appropriate progress toward the degree. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**Yiddish**

314 Cunz Hall, 1841 Millikin Road, 292-6985

**101 Elementary Yiddish I U 5**

Introduction to Yiddish; development of listening, reading, speaking and writing skills.

Au, Sp Qtrs. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**102 Elementary Yiddish II U 5**

Continuation of 101; further development of listening, reading, speaking and writing skills.

Au, Wi Qtrs. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

**103 Intermediate Yiddish I U 5**

Continued study of Yiddish; development of listening, reading, speaking and writing skills; reading of simplified literary texts about Yiddish culture.

Wi, Sp Qtrs. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

**104 Intermediate Yiddish II U 5**

Readings of Yiddish short stories and poems with attention to literary and cultural appreciation; development of basic language skills.

Au, Sp Qtrs. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

**241 Yiddish Culture U 5**

Introductory survey of political, social, ideological, and religious trends as reflected in Yiddish culture, especially folklore and literature.

Au Qtr. 5 cl. Not open to students with credit for 341. GEC arts and hums cultures and ideas course.

**293 Individual Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Special topics announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**367 Jewish-American Voices in U. S. Literature U 5**

Introduction to Jewish-American literature; development of expository writing and argumentation skills through systematic and critical reflection upon their own country from the perspective of an ethnic community.

Au Qtr. 2 2-hr cl. Prereq: English 110 or 111 or equiv. and soph standing. GEC second writing course.

**371 Yiddish Literature in Translation U 5**

Reading, analysis, and discussion of representative works and of the development of major movements and genres in Yiddish literature.

Wi Qtr. 5 cl. Taught in English. GEC arts and hums lit course.

**399 The Holocaust in Literature and Film U 5**

Reading, analysis, and discussion of representative works pertaining to the Holocaust, from the perspectives of the German and Ashkenazic traditions.

Wi Qtr. 2 1.5-hr cl. Not open to students with credit for German 399. Cross-listed in German. Taught in English. GEC arts and hums lit course.

**401 Advanced Yiddish I U 5**

Reading in literary and journalistic prose, with practice in conversation and composition; intensive review of Yiddish grammar.

Wi Qtr. 5 cl. Prereq: 104 or equiv. Not open to students with credit for 294. Wi 1983 or Wi 1984.

**402 Advanced Yiddish II U 5**

Readings in texts from the nineteenth century to the present with emphasis on contemporary prose; practice in conversation and composition.

Sp Qtr. 5 cl. Prereq: 401 or equiv. Not open to students with credit for 294. Sp 1984.

**603\*\* Advanced Yiddish Conversation and Composition U G 5**

Intensive practice in speaking and writing Yiddish, based on contemporary Yiddish literary usage; conducted entirely in Yiddish.

Au Qtr. 5 cl. Prereq: 402 or permission of instructor.

**611^ History of the Yiddish Language U G 5**

Linguistic history of Yiddish; Yiddish dialect formation; analysis of Yiddish documents from the 13th century to the present; Yiddish in the context of Jewish interlinguistics.

Au Qtr. 5 cl. Prereq: 402 or equiv or permission of instructor.

**612 Yiddish Linguistic Geography U G 5**

Development and description of Yiddish dialect areas; linguistic atlases and the mapping of Yiddish dialect features; dialect networks; development of standard Yiddish.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 402 or permission of instructor.

**641 Language and Society in Interwar Vienna U G 5**

Interwar Viennese social and political structure; language and literary expression; ethnic diversity; arts and architecture; gender politics; transition of empire to republic; roots of Austro-fascism; anti-Semitism.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: Jr standing or permission of instructor. Not open to students with credit for German 641. Cross-listed in German.

**651^ Modern Yiddish Prose U G 5**

Reading and analysis of short stories and novels representative of major developments and trends in Yiddish prose of the 19th and 20th centuries.

Au Qtr. 5 cl. Prereq: 402 or equiv.

**671 Yiddish for Speakers of German U G 5**

Yiddish for speakers of German; stylistics of academic Yiddish; introduction to bibliography in Yiddish and Ashkenazic studies.

Wi Qtr. 3 1.3-hr cl. Prereq: German 201 or higher or equiv. or grad standing in German. May not be used to satisfy any part of the undergrad foreign language requirement.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Special topics to be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This is a Progress course. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**721 Studies in Yiddish Literature U G 5**

Advanced study of specific literary periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials.

Wi Qtr. 5 cl. Prereq: 5 cr hrs of Yiddish at the 600 level. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR in the commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**811 Seminar in Yiddish Studies G 5**

In-depth study of a selected topic or issue in Yiddish literature, linguistics, or intellectual culture.

Sp Qtr. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**998 Research in Yiddish G 1-10**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

## Yoruba

486 University Hall, 230 North Oval Mall, 292-3700

**101^ Elementary Yoruba I U 5**

Introduction to elementary Yoruba with emphasis on oral proficiency.

5 cl. Not open to native speakers of this language through regular course enrollment or EM credit or to students with 3 or more yrs of study in this language in high school. GEC for lang course. FL Admis Cond course.

**102^ Elementary Yoruba II U 5**

Continuation of 101 with emphasis on oral proficiency.

5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

**103^ Intermediate Yoruba I U 5**

Intermediate Yoruba, combining oral and reading skills.

5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

**104^ Intermediate Yoruba II U 5**

Continuation of 103, combining oral and reading skills.

5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

## Zulu

486 University Hall, 230 North Oval Mall, 292-3700

**101 Elementary Zulu I U 5**

Introduction to elementary Zulu, using a proficiency-based approach.

Au Qtr. 5-hr cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang course. FL Admis Cond course.

**102 Elementary Zulu I U 5**

Continuation of 101, using a proficiency-based approach.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course. GEC for lang course. FL Admis Cond course.

**103 Intermediate Zulu I U 5**

Introduction to intermediate Zulu, using a proficiency-based approach.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

**104 Intermediate Zulu II U 5**

Continuation of 103, using a proficiency-based approach.

Sp Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.



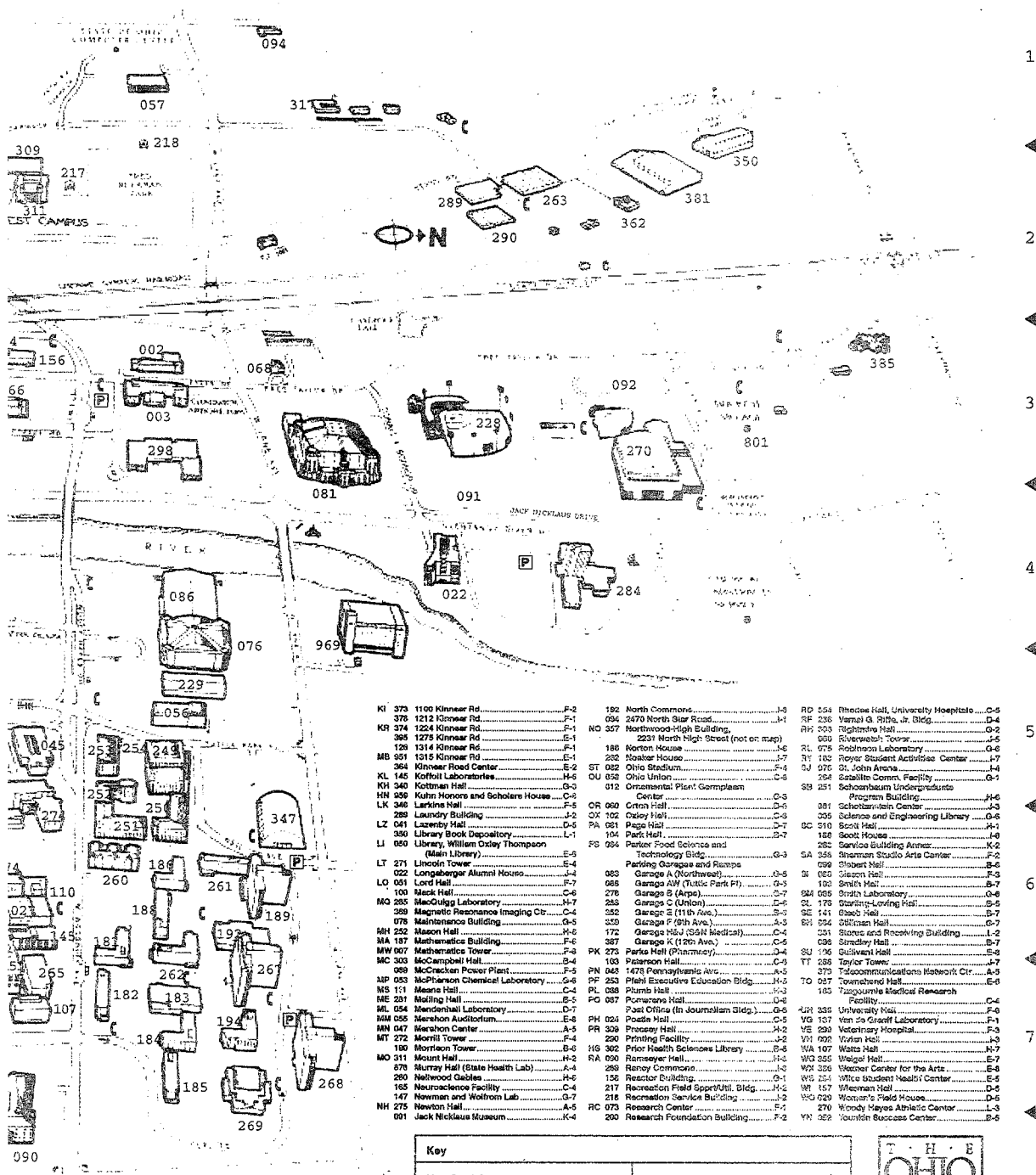


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AA 003	Agricultural Administration Bldg.	J-3	303	Comprehensive Cancer Center	C-4	PR 059	Fry Hall	B-6
AE 208	Agricultural Engineering Bldg.	J-3		(above Wilkerson Hall)		QB 292	Galbreath Epilepsy Center	G-3
040	Alumnus Scholarship House	E-6	CV 056	Commerce Hall	J-5	QB 132	General Biology Annex	D-5
174	Animal House	F-1	300	Cramblett Hall (Hospitality Clinic)	B-4	QE 250	Gerlach Graduate Programs Bldg.	J-6
AS 156	Animal Science Building	J-3	CZ 292	Cruz Hall of Languages	E-5	GL 180	Goss Laboratory	F-3
381	Anchor House	F-3	917	Dairy Science Center, Waterman Farm Complex	J-1	GR 277	Graves Hall	B-6
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AH 308	Abnerl Hall (Allied Medical Professions)	F-3	223	David Beane Hall Stadium	J-3	HL 259	Hale Hall	C-6
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065	Baker Hall	B-7	DV 307	David Medical Research Center	A-4	HK 027	Haskett Hall	H-6
BE 080	Baker Systems Engineering Bldg.	E-5	DE 030	Dannery Hall	F-6	HL 182	Hawthorn House	H-7
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013	Battelle Building	A-4	DN 005	Doan Hall	C-5	HI 274	Hiltzhook Hall	H-6
307	Bevia Hall	D-1	DD 071	Dodd Hall	B-4	HC 140	Hopkins Hall	F-7
BI 276	Biological Sciences Building	D-3	169	Drackott Tower	B-4	HU 042	Howell House	J-7
010	Biological Sciences Greenhouses	C-5	DT 226	Drake Union	E-4	HT 229	Howlett Greenhouse	G-3
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380	Blankenship Hall	C-2	129	Drum and Cylinder Building	F-1	IR 229	Ice Rink	J-5
BO 149	Bois Hall	G-3	DU 307	Duffin Hall	F-4	IS 328	Independence Hall	F-6
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BR 016	Brown Hall	F-6	302	53 West 11th Avenue	A-3	SR 348	South	B-6
BA 865	Browning Amphitheatre	D-8	BN 007	Burns Hall	C-4	WR 340	West	G-2
301	Buckeye Village	L-3	539	Evans Hall (Franklin Cnty Morgue)	A-4	JO 092	Joan Owens Stadium	J-3
302	Bull Chemical Warehouse	L-2	BL 150	Evans Laboratory	G-7	JO 092	Joan Owens Stadium	J-3
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CH 052	Cordline Hall	F-5				JO 092	Joan Owens Stadium	J-3

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KI 373 1100 Kinnear Rd.	F-2	192 North Commons	J-4	RD 254 Rhodes Hall, University Hospitals	D-5
378 1212 Kinnear Rd.	F-1	094 2470 North Star Road	M-1	RF 236 Yarnal & Ritts, Jr. Bldg.	D-4
KR 374 1224 Kinnear Rd.	F-1	NO 357 Northwood-High Building		RH 203 Nightmare Hall	G-2
389 1278 Kinnear Rd.	E-1	221 North High Street (not on map)		000 Riverwalk Tower	J-5
126 1314 Kinnear Rd.	F-1	180 Norton House	J-6	RL 075 Robinson Laboratory	G-6
MB 501 1315 Kinnear Rd.	E-1	202 Noxter House	J-7	RY 102 Royer Student Activities Center	L-7
364 Kinnear Road Center	E-2	052 Ohio Stadium	F-4	DJ 076 St. John Arena	L-4
KL 145 Kottman Laboratories	H-6	OU 052 Ohio Union	C-5	294 Satellite Comm. Facility	G-1
KH 340 Kottman Hall	G-3	012 Ornamental Plant Greenhouse		SB 251 Schoenbaum Undergraduate	
HN 555 Kuhn Honors and Scholars House	C-6	Center	C-3	Program Building	H-6
LK 340 Larkins Hall	F-5	OR 060 Cronin Hall	C-6	067 Schottstein Center	J-3
289 Laundry Building	J-2	OX 102 Ooley Hall	C-9	305 Science and Engineering Library	G-6
LZ 041 Lazenby Hall	D-5	PA 081 Page Hall	D-7	GC 310 Scott Hall	H-1
350 Library Book Depository	L-1	104 Park Hall	D-7	188 Scott House	L-0
LI 050 Library, William Ooley Thompson		SR 094 Parker Food Science and		255 Service Building Annex	K-2
(Main Library)	E-6	Technology Bldg.	G-3	SA 356 Sherman Studio Arts Center	F-2
LT 271 Lincoln Tower	E-4	Parking Garages and Ramps		099 Robert Hall	B-6
022 Longsaber Alumni House	J-4	Garage A (Northwest)	G-5	SI 003 Stern Hall	F-3
LO 001 Lord Hall	F-7	088 Garage AN (Tuttle Park Pl.)	G-3	102 Smith Hall	B-7
100 Mack Hall	C-6	276 Garage B (Arpe)	C-7	084 085 Smith Laboratory	
MA 255 MacDougall Laboratory	H-7	Garage C (Union)	C-6	SL 178 Staring-Loving Hall	B-5
359 Magnetic Resonance Imaging Ctr.	C-4	Garage E (11th Ave.)	S-3	SE 141 Shack Hall	B-7
078 Maintenance Building	G-5	320 Garage F (8th Ave.)	A-3	SI 054 Stillman Hall	G-7
MH 232 Mason Hall	H-6	172 Garage H&J (SDH Medical)	C-4	251 Stone and Receiving Building	L-2
MA 137 Mathematics Building	F-6	Garage K (12th Ave.)	C-6	039 Stradley Hall	D-7
MW 007 Mathematics Tower	F-3	357 Garage L (12th Ave.)	C-6	SU 196 Sullivan Hall	E-8
MC 303 McCampbell Hall	B-4	PK 273 Parks Hall (Pharmacy)	D-4	TT 236 Taylor Tower	J-7
069 McCracken Power Plant	F-9	103 Paterson Hall	C-9	273 Telecommunications Network Ctr.	A-3
MP 053 McPherson Chemical Laboratory	C-6	PK 045 1478 Pennsylvania Ave.	A-3	TO 057 Townsend Hall	E-6
MS 111 Means Hall	C-4	SP 253 Plant Executive Education Bldg.	H-0	103 Tusculum Medical Research	
ME 201 Mealing Hall	B-5	PL 038 Plumb Hall	J-3	Facility	C-4
ML 054 Mendelhall Laboratory	D-7	PO 087 Pomerehne Hall	G-6	42W 335 University Hall	F-0
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MT 272 Merrill Tower	F-4	200 Printing Facility	J-2	VI 002 Vinton Hall	L-3
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578 Murray Hall (State Health Lab)	A-4	289 Renay Commons	J-2	WJ 326 Weicker Center for the Arts	E-6
260 Walnutwood Gables	H-6	155 Reister Building	G-1	WJ 237 Wilcox Student Health Center	E-5
165 Neuroscience Facility	C-4	217 Recreation Field Sports/Atlt. Bldg.	H-2	WH 157 Whisman Hall	D-5
147 Newman and Wolfson Lab	G-7	218 Recreation Service Building	J-2	WG 020 Woman's Field House	D-5
NH 275 Newton Hall	A-5	RC 073 Research Center	F-2	270 Woody Hayes Athletic Center	L-3
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The first of these is the fact that the  
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# University Calendar

## Autumn Quarter 2001

September	19	Classes begin, 7:30 am
November	12	Veterans' Day--no classes, offices closed
November	22	Thanksgiving Day--no classes, offices closed
November	23	Columbus Day observed--no classes, offices closed
November	30	Last day of regularly scheduled classes
December	3-6	Final examinations
December	7	Autumn commencement
December	24	Presidents' Day observed--offices closed
December	25	Christmas Day observed--offices closed

## Winter Quarter 2002

January	1	New Year's Day observed--offices closed
January	7	Classes begin, 7:30 a.m.
January	21	Martin Luther King Day--no classes, offices closed
March	15	Last day of regularly scheduled classes
March	18-21	Final examinations
March	22	Winter commencement

## Spring Quarter 2002

April	1	Classes begin, 7:30 a.m.
May	27	Memorial Day observed -- no classes, offices closed
June	7	Last day of regularly scheduled classes
June	10-13	Final examinations
June	14	Spring commencement

## Summer Quarter 2002

June	24	Quarter and first-term classes begin
July	4	Independence Day observed--no classes, offices closed
July	24	Last day of regularly scheduled classes for first-term courses
July	25-26	Final examinations for first-term courses only--at regular class hours
July	29	Second-term classes begin
August	27	Last day of regularly scheduled classes for quarter and second-term courses
Aug	28-30	Final examinations for quarter and second-term courses
August	30	Summer commencement
September	2	Labor Day--offices closed



## Board of Trustees

(The expiration date of each trustee's term is indicated in parentheses.)

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The policy of The Ohio State University, both traditionally and currently, is that discrimination against any individual for reasons of race, color, creed, national origin, religion, sex, sexual orientation, age, handicap, or Vietnam-era veteran status is specifically prohibited. Accordingly, equal access to employment opportunities, admissions, educational programs, and all other university activities is extended to all persons, and the university promotes equal opportunity through a positive and continuing affirmative action program.

The university's Office of Human Resources/Affirmative Action, 124 Archer House, 2130 Neil Avenue, Columbus, Ohio 43210-1175; 614-292-4207, is responsible for the coordination of matters relating to equal opportunity and affirmative action. United States Department of Defense regulations prohibit gay men, lesbians, and bisexuals from serving in the armed forces, including Reserve Officers Training Corps. As a result of the prohibition, ROTC programs at Ohio State are in violation of University Policy Number 1.10 (Issued 10/1/73).



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